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THE SPIDER GENERA *CRUSTULINA* AND *STEATODA*
IN NORTH AMERICA, CENTRAL AMERICA, AND
THE WEST INDIES (ARANEAE,
THERIDIIDAE)

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No. 3—*The Spider Genera CRUSTULINA and STEATODA
in North America, Central America,
and the West Indies (Araneae,
Theridiidae).*

BY HERBERT W. LEVI

This paper is one of the last in a series of generic revisions in the family Theridiidae of North America, Central America and the West Indies.

The genera revised in this paper are characterized by having a large colulus between the anterior spinnerets, lacking teeth on the posterior margin of the chelicerae, and having the lateral eyes close to each other or touching.

The spiders here placed in *Steatoda* have previously been distributed among four genera: *Asagena*, *Lithyphantes*, *Steatoda* and *Teutana*. The characters which have been used to separate the four genera are no longer useful as they are based on the limited European fauna. The *Steatoda* of previous authors was characterized by having the anterior median eyes larger than the others; however, several species placed in *Lithyphantes* may have individuals with anterior median eyes the largest (*S. medialis*; *S. pulcher*). *Lithyphantes* has been characterized as having the lateral eyes slightly separated from each other; however, this character is also present in *Steatoda*, while in some species of *Lithyphantes*, the lateral eyes touch. The few species of *Teutana* have the eyes subequal in size and the lateral eyes touching each other, a combination of characters hardly different from that found in many *Lithyphantes* species. Several species placed in *Lithyphantes* had their opposite sexes described in *Asagena*. The shape of the labium and the shape of the sternum are unreliable characters. The latter depends in part on the size of the spider; the former is a characteristic of individual species. The carapace is narrow and long in some, usually the smaller, species; almost as wide as long in the largest. In several species of *Lithyphantes*, the paracymbial hook is on the mesal side in the cymbium of the male palpus; in others placed in *Lithyphantes*, and in species previously placed in *Steatoda* and *Teutana*, it is on the ectal side. However, no sharp line

can be drawn here either; there are species which are intermediate.

The idea that some of these genera ought to be combined is not new. Emerton placed species of *Teutana* in *Steatoda*. F.O.P. Cambridge (1902, *Biologia Centrali Americana*, Araneidea, vol. 2, p. 374) wrote that "The spiders referred to this genus [*Teutana*] are very difficult to separate by any reliable character from those included under *Lithyphantes*, though as far as one can judge, from the material at hand, the contiguity of the lateral eyes may prove constant." We now know that this latter character did not prove constant. Other authors also have commented on the difficulty of separating these genera.

This revision is based on material in the Museum of Comparative Zoology. Dr. W.J. Gertsch has made available to me the large collections of the American Museum of Natural History, for which I would like to thank him. Other collections were made available by Dr. A.M. Chickering; Mrs. D. Frizzell (Dr. H. Exline); Mr. V. Roth; Mr. R.X. Schick; and Dr. R.V. Chamberlin sent specimens of the *Steatoda bipunctata* group. Mr. Schick has raised male *Steatoda palomara* to maturity, making it possible to figure its palpus for the first time. Mr. E. Browning of the British Museum (Natural History) sent a syntype of *Steatoda americana* O.P. Cambridge, and a palpus of the type of *Lithyphantes quaesita*, as well as other specimens. Dr. H. Wiehle of Dessau has sent some male *Steatoda castanea* from Germany. I wish to express my sincere thanks for the cooperation of these colleagues.

The bibliographies of holarctic and cosmopolitan species are not complete; if needed, they can be consulted in Roewer's recent Katalog or in Bonnet's Bibliographia.

The drawings of palpi illustrate the left ones. Although keys are usually not necessary to determine spiders to species, two keys are included to point out differences in genitalia of the two species groups of *Steatoda*.

CRUSTULINA Menge

Crustulina Menge, 1868, *Schr. Naturf. Gesell. Danzig*, new ser., vol. 2, p. 168. Type species: *Crustulina guttata* (Wider).

Description. Small theridiid spiders (1-3 mm. total length).

Carapace longer than wide. Carapace and sternum covered by large elongate dark tubercles, which are the bases of fine hairs. Anterior eye row procurved, posterior slightly recurved. Eyes subequal in size. Anterior median eyes their diameter apart, almost touching laterals. Posterior medians one diameter apart, one diameter or slightly less from laterals. Height of clypeus equals three to four diameters of anterior medians in female, four to five diameters in male. Chelicerae with one large tooth on anterior margin, posterior margin without teeth. Legs relatively short, first or fourth legs longest, third shortest. A tarsal comb present on fourth tarsus. Abdomen subspherical, slightly flattened dorso-ventrally. Colulus large. Sclerotized ridge on anterior end of abdomen of males, as in *Steatoda*, but this structure also present in females.

Genitalia. Epigynum illustrated by Figures 2 and 5. Palpus with usual structures (Fig. 9); however, cymbium has a mesal process which may be homologous to the paracymbial hook in other genera.

Diagnosis. This genus differs from most theridiid genera by having a large colulus, and lacking teeth on the posterior margin of the chelicerae; it differs from *Steatoda* in having large dumb-bell shaped tubercles on carapace and sternum, in having a sclerotized ring around the pedicel on the abdomen of females and in having a median distal process on the cymbium of the male palpus.

Remarks. Since many species placed in *Crustulina* probably do not belong to it, its distribution is difficult to judge. *Crustulina lascivula* Keyserling, (1886, Die Spinnen Amerikas, vol. 2, pt. 2, p. 39, pl. 12, fig. 155, ♀), is *Paidisca unimaculata* (Emerton).

CRUSTULINA GUTTATA (Wider)

Theridion guttatum Wider, 1834, Abhandl. Mus. Senckenberg, vol. 1, p. 241, pl. 16, fig. 7, ♀, ♂.

Crustulina guttata, Wiehle, 1937, in Dahl, Die Tierwelt Deutschlands, pt. 33, p. 191, figs. 194-199, ♀, ♂. Locket and Millidge, 1953, British spiders, vol. 2, p. 51, figs. 26d, 35a,b,c, ♀, ♂.

This species has not been found in America. The many American references to the name *Crustulina guttata* are actually

either *C. altera* or *C. stricta*. Both are very similar to it, and only details of the genitalia distinguish *C. guttata*.

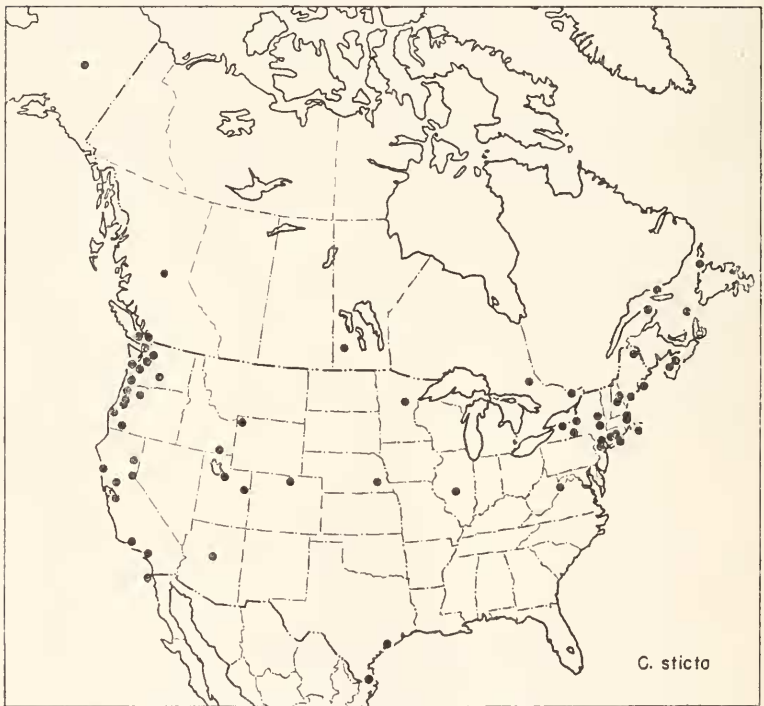
CRUSTULINA STRICTA (O.P. Cambridge)

Figures 1-3, 7; Map 1.

Theridion stictum O.P. Cambridge, 1861, Ann. Mag. Nat. Hist., ser. 3, vol. 7, p. 432. Emerton, 1876, Psyche, vol. 1, p. 129; 1877, Proc. Boston Soc. Nat. Hist., vol. 19, p. 70.

Steatoda sticta, Thorell, 1873, Remarks on synonyms of European spiders, p. 439.

Crustulina sticta, Simon, 1881, Les Arachnides de France, vol. 5, p. 158. Banks, 1895, Ann. New York Acad. Sci., vol. 8, p. 417; 1910, Bull. U.S. Natl. Mus., no. 72, p. 21. Petrunkevitch, 1911, Bull. Amer. Mus.



Map 1. American distribution of *Crustulina sticta* (O.P. Cambridge).

Nat. Hist., vol. 29, p. 172. Crosby and Bishop, 1928, Mem. Cornell Agr. Exp. Sta., no. 101, p. 1039. Emerton, 1930, Publ. Nantucket Maria Mitchell Assoc., vol. 3, p. 164. Roewer, 1942, Katalog der Araneae, vol. 1, p. 399. Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 75, figs. 34, 2120, ♀, ♂. Locket and Millidge, 1953, British spiders, vol. 2 p. 53, figs. 35d,e,f, ♀, ♂. Kaston, 1955, Trans. Illinois Acad. Sci., vol. 45, p. 166. Bonnet, 1955, Bibliographia Araneorum, vol. 2, p. 1256.

Crustulina borealis Banks, 1900, Canadian Ent., vol. 32, p. 98; 1910, Bull. U.S. Natl. Mus., no. 72, p. 21. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 172. Emerton, 1920, Trans. Roy. Canadian Inst., vol. 12, p. 312. Worley, 1932, Publ. Univ. Washington Biol., vol. 1, p. 23. Roewer, 1942, Katalog der Araneae, vol. 1, p. 399; Gertsch, 1946, in Procter, Biol. Surv. Mt. Desert Reg., pt. 7, p. 519. Chamberlin and Ivie, 1947, Bull. Univ. Utah, biol. ser., vol. 10, no. 3, p. 25. Hackman, 1954, Acta Zool. Fennica, vol. 79, p. 48. Bonnet, 1955, Bibliographia Araneorum, vol. 2, p. 1252.

Crustulina pallipes Banks, 1906, Proc. Ent. Soc. Washington, vol. 7, p. 96, pl. 2, fig. 15, ♀; 1910, Bull. U.S. Natl. Mus., no. 72, p. 21. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 172. Worley, 1932, Publ. Univ. Washington Biol., vol. 1, p. 24. Roewer, 1942, Katalog der Araneae, vol. 1, p. 399. Bonnet, 1955, Bibliographia Araneorum, vol. 2, p. 1255.

Types. Types of *Theridion stictum* from "roots of heath near Winchester, and at Bloxworth, Dorset," England. Two male syntypes of *Crustulina borealis* and four female syntypes of *Crustulina pallipes* from Olympia, Washington, in the Museum of Comparative Zoology.

Description. Carapace, sternum, brown; legs lighter brown. Abdomen (Fig. 3) colored as in *Steatoda borealis* or lacking a pattern; sometimes white or dark brown. Epigynum illustrated by Figure 2, male palpus by Figure 7. The openings of the epigynum of a Wisconsin specimen are not connected by a fold. Total length of females 2.2-2.7 mm. A female from Utah measured: total length, 2.6 mm. Carapace 1.06 mm. long, 1.04 mm. wide. First femur, 1.14 mm.; patella and tibia, 1.17 mm.; metatarsus 0.71 mm.; tarsus, 0.57 mm. Second patella and tibia, 0.91 mm.; third, 0.78 mm.; fourth, 1.01 mm. Total length of males 1.9-2.7 mm. A male from Utah measured: total length, 2.2 mm. Carapace 1.10 mm. long, 0.92 mm. wide. First femur, 1.04 mm.; patella and tibia, 1.10 mm.; metatarsus, 0.66 mm.;

tarsus 0.51 mm. Second patella and tibia, 0.88 mm.; third, 0.66 mm.; fourth, 0.93 mm.

Natural History. This species has been collected from leaf litter and from under boards and stones, often in moist places (Kaston, 1948; Locket and Millidge, 1953). Roth has collected it in fir needles in Oregon.

Distribution. England and parts of France (Simon, 1881; Locket and Millidge, 1953), United States to Alaska (Map 1). Judging by its wide distribution, this species is probably native to North America.

Records. *Alaska:* (Chamberlin and Ivie, 1947). *Newfoundland:* (Hackman, 1954). *Nova Scotia:* Annapolis Co.; Kings Co. *Quebec:* Gaspé Pen.; Brion Isl.; Niapisca Isl. *Ontario:* 36 mi. N. of North Bay; Ottawa. *Manitoba:* Riding Mtn. *British Columbia:* (Emerton, 1920); Departure Bay; Vanderhoof; Wellington. *Maine:* Aroostook Co.; Cumberland Co.; Mt. Desert Isl.; *New Hampshire:* Carroll Co.; Mt. Washington. *Massachusetts:* (Emerton, 1930); Essex Co.; Middlesex Co.; Plymouth Co. *Connecticut:* (Kaston, 1948). *New York:* (Crosby and Bishop, 1928); Rochester; Suffolk Co. *New Jersey:* Bergen Co. *West Virginia:* Pendleton Co. *Michigan.* *Illinois:* (Kaston, 1955). *Minnesota:* Aitkin Co. *Nebraska:* Lancaster Co. *Texas:* Hidalgo Co.; Matagorda Co. *Wyoming:* Yellowstone Natl. Pk. *Colorado:* Fort Collins. *Idaho:* Oneida Co. *Utah:* Salt Lake City; Uintah Co. *Arizona:* Coconino Co. *Washington:* (Worley, 1932); Island Co.; Olympia; Pacific Co.; San Juan Co.; Seattle; Snohomish Co.; Yakima. *Oregon:* Benton Co.; Coos Co.; Clackamas Co.; Columbia Co.; Jackson Co.; Yamhill Co. *California:* Alameda Co.; Lassen Co.; Los Angeles Co.; Mendocino Co.; Placer Co.; San Francisco; Santa Barbara; Yolo Co. *Baja California:* Islas Coronado; "San José."

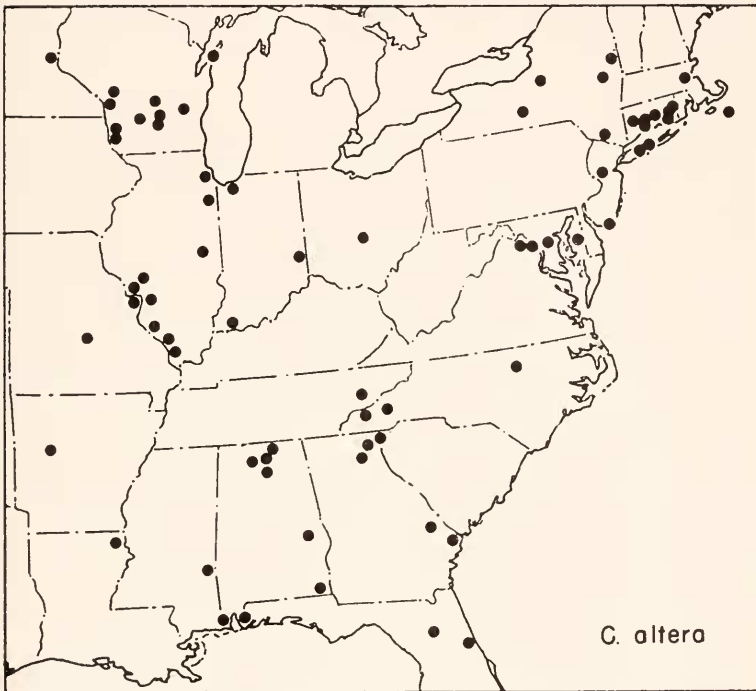
CRUSTULINA ALTERA Gertsch and Archer

Figures 4-6, 8-10; Map 2.

Steatoda guttata, Emerton, 1882, Trans. Connecticut Acad. Sci., vol. 6, p. 20, pl. 4, fig. 2, ♂. Emerton, 1902, The common spiders, p. 120, figs. 280-281, ♀. Not *Crustulina guttata* (Wider).

Crustulina sticta, Keyserling, 1886, Die Spinnen Amerikas, vol. 2, pt. 2, p. 37, pl. 12, fig. 154, ♀, ♂. Not *Crustulina sticta* (O.P. Cambridge).

Crustulina guttata, Banks, 1896, Jour. New York Ent. Soc., vol. 4, p. 191; 1900, Proc. Acad. Nat. Sci. Philadelphia, p. 533. Banks, 1910, Bull. U.S. Natl. Mus. no. 72, p. 21; 1911, Proc. Acad. Nat. Sci. Philadelphia, vol. 63, p. 445. Comstock, 1912, The spider book, p. 360. Barrows, 1918, Ohio Jour. Sci., vol. 18, p. 303. Emerton, 1919, Ent. News, vol. 30, p. 167. Bishop and Crosby, 1926, Jour. Elisha Mitchell Sci. Soc., vol. 41, p. 176. Crosby and Bishop, 1928, Mem. Cornell Agr. Exp. Sta.,



Map 2. Distribution of *Crustulina altera* Gertsch and Archer.

no. 101, p. 1039. Emerton, 1930, Publ. Nantucket Maria Mitchell Assoc., vol. 3, p. 164. Crosby and Bishop, 1936, Jour. New York Ent. Soc., vol. 44, p. 44. Kaston, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 185. Comstock, 1940, The spider book, rev. ed., p. 375. Lowrie, 1948, Ecology, vol. 29, p. 336. Dowdy, 1950, Amer. Midland Nat., vol. 43, p. 667. Bonnet, 1955, Bibliographia Araneorum, vol. 2, p. 1256, in part. Not *Crustulina guttata* (Wider).

Crustulina altera Gertsch and Archer, 1942, Amer. Mus. Novitates, no. 1171,

p. 1, fig. 9, ♀. Chamberlin and Ivie, 1944, Bull. Univ. Utah, biol. ser., vol. 8, no. 5, p. 39. Muma, 1945, Bull. Univ. Maryland Agr. Exp. Sta., no. A38, p. 25. Archer, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 20. Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 74, figs. 30-33, 2119, ♀, ♂. Kaston, 1953, How to know the spiders, p. 161, fig. 403, ♀. Levi and Field, 1954, Amer. Midland Nat., vol. 51, p. 442. Kaston, 1955, Trans. Illinois Acad. Sci., vol. 47, p. 166.

Types. Male holotype and female allotype of *C. altera* from Norwalk, Connecticut, in the American Museum of Natural History.

Description. Carapace, sternum orange-brown; legs yellowish. Abdomen (Fig. 10) with brown maculations sometimes similar to that of *C. sticta*. Epigynum illustrated by Figure 5, male palpus by Figure 8. Total length of females 1.5-2.0 mm. A female from Illinois measured: total length 1.8 mm. Carapace 0.42 mm. long, 0.80 mm. wide. First patella and tibia 0.85 mm.; second, 0.67 mm.; third, 0.49 mm. Fourth femur, 0.85 mm.; patella and tibia, 0.89 mm.; metatarsus, 0.45 mm.; tarsus, 0.41 mm. Total length of males 2.0-2.3 mm. A male from Illinois measured: total length 2.3 mm.; carapace 1.23 mm. long, 0.98 mm. wide. First femur 1.07 mm.; patella and tibia, 1.18 mm.; metatarsus, 0.72 mm.; tarsus, 0.57 mm. Second patella and tibia, 0.98 mm.; third, 0.75 mm.; fourth, 1.03 mm.

Natural History. This species is found under logs and stones. In Wisconsin it is commonly collected by sifting leaf litter from relatively dry forests. In Connecticut males overwinter as adults. Egg sacs are 3 mm. in diameter made of few white threads and containing about five pink eggs (Kaston, 1948). Both Emerton (1919) and Crosby and Bishop (1939) collected it with ballooning spiders.

Distribution. Eastern United States (Map 2). There are many records from the West and Canada; however these seem to be *C. sticta*.

Records. *Massachusetts:* (Emerton, 1930); Boston. *Connecticut:* (Kaston, 1948). *New York:* (Crosby and Bishop, 1928; Gertsch, 1942). *New Jersey:* Cape May; Mercer Co. *Maryland:* (Muma, 1945). *District of Columbia:* Washington. *Virginia:* Fairfax Co. *North Carolina:* Durham; Buncombe Co.; Haywood Co. *South Carolina:* Stumphouse Mtn. *Georgia:* (Chamberlin and Ivie, 1944). *Florida:* (Gertsch, 1942); Volusia Co.

Alabama: (Gertsch, 1942; Archer, 1946). *Mississippi*: Lauderdale Co. *Louisiana*: (Crosby and Bishop, 1936). *Ohio*: (Barrows, 1918). *Indiana*: (Lowrie, 1948) Vanderburgh Co. *Tennessee*: (Gertsch, 1942). *Wisconsin*: (Levi and Field, 1954): Crawford Co.; La Crosse Co.; Jackson Co.; Sauk Co.; Waushara Co. *Illinois*: Bond Co.; Jackson Co.; Macoupin Co.; Piatt Co.; Union Co.; Will Co. *Minnesota*: Minneapolis. *Missouri*: (Dowdy, 1950); St. Louis. *Arkansas*: Yell Co.: Roaring River State Pk.

STEATODA Sundevall

Steatoda Sundevall, 1833, Conspectus Arachnidum, p. 16. Type species:

“*Theridion 4-punctatum*” (= *Steatoda bipunctata* Linnaeus).

Asagena Sundevall, 1833, *op. cit.*, p. 19. Type species: *Asagena phalerata* Panzer.

Lithyphantes Thorell, 1869, On European spiders, p. 94. Type species:

Lithyphantes corollatus Linnaeus (= *Steatoda albomaculata* De Geer).

Tcutana Simon, 1881, Les Arachnides de France, vol. 5, p. 161. Type species: *Tcutana triangulosa* Walekenaer.

Stearodca F.O.P. Cambridge, 1902, Ann. Mag. Nat. Hist., ser. 7, vol. 9, p. 193. Type species: *Aranea bipunctata* Linnaeus.

Remarks on nomenclature. Sundevall listed four species as belonging to *Steatoda*, but did not indicate the type. C.L. Koch in 1845, according to F.O.P. Cambridge, 1902, withdrew *Aranea 4-punctatum*, the first species listed, from *Steatoda* and placed it in *Eucharhia*. Cambridge believed that one of the remaining species, *Theridion lunatum* ought to be the type. If we were to follow Cambridge, *Achaea* Keyserling (= *Achaeearanea* Strand) would be a subjective synonym of *Steatoda*. However, it seems best to continue the usage of the last fifty years and assume *Aranea bipunctata* to be the type.

Description. Medium sized to large theridiid spiders (2-11 mm. total length). Carapace slightly longer than wide in larger species, longer than wide in smaller ones, sometimes with a circular or transverse depression. Anterior eye row straight to procurved when viewed from in front, posterior row straight or slightly recurved when viewed from above. Size of eyes variable. Carapace highest at posterior eye row. Chelicerae about as long as height of carapace with one tooth on anterior margin (Figs. 63, 87), or two (*S. moesta*). Legs of medium

length. First or fourth longest sometimes subequal in length, third shortest. A distinct comb present on fourth tarsus. Abdomen subglobular in larger species, longer than wide or high in smaller species. Colulus large (Figs. 62, 86).

Sexual dimorphism. Male slightly smaller than female. Carapace and sternum of males sometimes more rugose; carapace of male with a stridulating organ on each side of pedicel. Anterior end of abdomen above pedicel with a semicircular sclerotized carina which apparently rubs against stridulating organ. Males of many species with chelicerae enlarged, and endites swollen, sometimes with tubercles on endites. The males of some species (*S. americana*) may have the first pair of legs thicker, and the second with a spine. Males are much less common in collections than females.

Genitalia. Epigynum often with a flat plate and a median lobe projecting posteriorly. Two seminal receptacles present. Ducts heavily sclerotized in the *S. bipunctata* group. Palpus with a large radix (R in Figs. 60, 61, 69, 75, 153, 154), median apophysis (M), conductor (C) and embolus (E). Embolus may have an elaborate base which may be of diagnostic value in both the *S. fulva* and *S. bipunctata* group. Paracymbial hook (P) on the mesal side of alveolus in some species (Fig. 60) in others distal or ectal apparently holding median apophysis in all species. In *S. albomaculata* which has the paracymbial hook ectal, the median apophysis has a process which probably fits against this structure (Fig. 61).

Diagnosis. This genus differs from other theridiid genera by having a large colulus; one or two teeth on the anterior margin of the chelicerae, no teeth on the posterior. It differs from *Latrodectus* in that the lateral eyes are touching each other or are separated by less than their diameter; from *Crustulina* in lacking a spur on the mesal side of the cymbium of male palpus and lacking a sclerotized ring on the abdomen of females around the pedicel.

Distribution. Members of this genus are found in all parts of the world. Several are cosmopolitan.

Misplaced species. The following North American species described as *Lithyphantes* or *Steatoda* are misplaced.

Lithyphantes cyaneus Worley, 1928, Ann. Ent. Soc. Amer., vol. 21, p. 621, figs. 5,6, ♀, is a *Singa* (Argiopidae).

Lithyphantes mimoides Chamberlin, 1919, Jour. Ent. Zoo., vol. 12, p. 8, pl. 3, fig. 4, ♀, is *Enoplognatha marmorata* (Hentz).

Lithyphantes oophorus Petrunkevitch, 1930, Trans. Connecticut Acad. Sci., vol. 30, p. 170, figs. 8, 9, ♀, is *Coleosoma floridana* Banks.

Steatoda fusca Emerton, 1894, Trans. Connecticut Acad. Sci., vol. 9, p. 407, pl. 2, fig. 1, ♀, ♂ is a *Ctenium*.

Steatoda nigra Emerton, 1884, Trans. Connecticut Acad. Sci., vol. 6, p. 21, pl. 4, fig. 4, ♀, ♂ is a *Dipoena*.

F.O.P. Cambridge (1902, Biologia Centrali Americana, Araneidea, vol. 2) described several species of *Theridion* in the genus *Steatoda*.

STEATODA NIGROFEMORATA (Keyserling), new combination

Figures 11-13; Map 3.

Lithyphantes nigrofemoratus Keyserling, 1882, Die Spinnen Amerikas, vol. 2, no. 1, p. 139, pl. 6, fig. 87, ♀. F.O.P. Cambridge, 1902, Biologia Centrali Americana, Araneidea, vol. 2, p. 376, pl. 35, fig. 14, ♀. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 183. Chamberlin, 1916, Bull. Mus. Comp. Zool., vol. 60, p. 232. Banks, 1929, *ibid.*, vol. 69, p. 86. Mello-Leitão, 1941, Rev. Mus. La Plata, vol. 2, p. 141. Roewer, 1942, Katalog der Araneae, vol. 1, p. 408.

Asagena alticeps Keyserling, 1886, Die Spinnen Amerikas, vol. 2, pt. 2, p. 4, fig. 136, ♂. Simon, 1894, Histoire naturelle des Araignées, vol. 1, p. 576. F.O.P. Cambridge, 1902, Biologia Centrali Americana, Araneidea, vol. 2, p. 377, pl. 35, fig. 16, ♂. Simon, 1903, Histoire naturelle des Araignées, vol. 2, p. 990. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 170. Reimoser, 1939, Ann. Naturhist. Mus. Wien, vol. 50, p. 344. Mello-Leitão, 1940, Arq. Zool., vol. 12, p. 176. Roewer, 1942, Katalog der Araneae, vol. 1, p. 396. Bonnet, 1955, Bibliographia Araneorum, vol. 2, p. 752. Caporiacco, 1955, Acta Biol. Venezuelica, vol. 1, p. 329, fig. 22, ♀. NEW SYNONYMY.

Lithyphantes lactus O.P. Cambridge, 1896, Biologia Centrali Americana, Araneidea, vol. 1, p. 181, pl. 22, fig. 12, ♂. NEW SYNONYMY.

?*Asagena patagonica* Tullgren, 1901, Svenska Exped. Magellansländerna, vol. 2, no. 10, p. 194, pl. 15, fig. 4, ♀. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 171. Roewer, 1942, Katalog der Araneae, vol. 1, p. 397. NEW SYNONYMY.

Types. Female holotype of *Lithyphantes nigrofemoratus* from Monte Rico, Peru, in the collection of the University of War-

saw, Poland. Male holotype of *Asagena alticeps* from Nueva Granada, Colombia. Male holotype of *Lithyphantes lactus* from Costa Rica in the British Museum (Natural History). Three female syntypes of *Asagena patagonica* from Patagonia, probably in the Riksmuseum, Stockholm.

Description. Carapace, sternum, legs yellow-brown; femora much darker, ends of tibiae darker. Abdomen black, dorsum usually with two transverse lines, an anterior one and one posterior which is broken on each side. South American specimens often with spots on dorsum; venter with a white spot behind genital groove. Anterior median eyes smaller than



Map 3. Distribution of *Steatoda nigrofemorata* (Keyserling).

others, one diameter apart, one-half to one diameter from laterals. Posterior median eyes three-quarters their diameter apart, a little more than one diameter from laterals. Male chelicerae enlarged, lacking distinct tooth on anterior margin. Epigynum with a wrinkled scape (Fig. 13), male palpus illustrated by Figure 11. The embolus of the palpus is sometimes broken off. Total length of females 3.8-4.3 mm. A female from Panama measured: total length, 4.2 mm. Carapace 1.6 mm. long, 1.2 mm.

wide. First patella and tibia, 1.7 mm.; second, 1.5 mm.; third, 1.3 mm. Fourth femur, 1.5 mm.; patella and tibia, 1.8 mm.; metatarsus, 1.1 mm.; tarsus, 0.7 mm. Total length of males 3.3-3.5 mm. A male from Panama measured total length, 3.5 mm. Carapace 1.8 mm. long, 1.1 mm. wide. First patella and tibia, 1.6 mm.; second, 1.5 mm.; third, 1.2 mm. Fourth femur, 1.6 mm.; patella and tibia, 1.9 mm.; metatarsus, 1.3 mm.; tarsus, 0.7 mm. Tullgren's specimens were larger, total length 6 mm.

Natural History. This species has been collected under a fallen tree in Peru. Tullgren found his in dry, sandy localities.

Distribution. South America, north to Veracruz (Map 3).

Records. *Veracruz:* 10 mi. S. of San José del Carmen. *Guatemala:* Quiriguá. *Nicaragua:* Musawas. Waspue River. *Costa Rica:* (Reimoser, 1939). *Panama:* Barro Colorado Island; Boquete; La Compana; Santa Rosa, Colon Prov. *Venezuela:* (Caporiacco, 1955). *British Guiana:* (Mello-Leitão, 1940). *Peru:* (Chamberlin, 1916); Ayacucho; Húanuco; Huancayo; Tingo María; Pucará. *Brazil:* Minas Geraes; Minha Serinha Diamantina. *Parana:* Cavinna; Rolândia. *Argentina:* (Tullgren, 1901; Mello-Leitão, 1941); Salta.

STEATODA MOESTA (O.P. Cambridge), new combination

Figures 15-18; Map 4.

Steatoda brasiliensis, Keyserling, 1886, Die Spinnen Amerikas, vol. 2, pt. 2, p. 238, pl. 20, fig. 293, ♀. Not *Steatoda brasiliensis* Keyserling, 1884, *ibid.*, pt. 1, p. 115, pl. 5, fig. 75, ♂.

Asagena moesta O.P. Cambridge, 1896, Biologia Centrali Americana, Araneidea, vol. 1, p. 209, pl. 25, fig. 4, ♀. F.O.P. Cambridge, 1902, *ibid.*, vol. 2, p. 35, fig. 18, ♀. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 170. Roewer, 1942, Katalog der Araneae, vol. 1, p. 397. Bonnet, 1955, Bibliographia Araneorum, vol. 2, p. 753. Kraus, 1955, Abhandl. Senckenbergischen Naturf. Gesell., no. 493, p. 15.

Type. Female type of *Asagena moesta* from Guatemala in the British Museum (Natural History).

Description. Carapace, sternum dark brown. Legs dark brown, except fourth, which have femora and tibiae orange brown, with ends darker. Abdomen black with white marks on dorsum (Fig. 15); venter with white marks on each side of

epigastric area. Male with sclerotized portions orange brown. Eyes subequal in size. Anterior median eyes separated by two-thirds their diameter. Posterior medians two-thirds diameter apart, two-thirds to one diameter from laterals. Chelicerae with two teeth on anterior margin. Epigynum a black spot in a lighter area, posterior to which is a small scape (Fig. 17). In South American specimens the black spot may be larger, the posterior scape indistinct. Coloration and shape quite variable. Male palpus illustrated by Figure 18. Total length of females 4.8-8.7 mm. A female from Panama measured total length, 8.7 mm. Carapace 3.8 mm. long; 3.3 mm. wide. First femur, 5.0 mm.;



Map 4. Distribution of *Steatoda moesta* (O.P. Cambridge) and *S. saltensis*, new species.

patella and tibia, 5.4 mm.; metatarsus, 4.0 mm.; tarsus, 1.8 mm. Second patella and tibia, 4.3 mm.; third, 3.5 mm.; fourth, 4.9 mm. Total length of males, 6.2-8.0 mm. A male from Panama measured total length, 6.5 mm. Carapace 3.4 mm. long; 2.5 mm. wide. First femur, 4.3 mm.; patella and tibia, 4.3 mm.; metatarsus, 3.3 mm.; tarsus, 1.6 mm. Second patella and tibia, 3.6 mm.; third, 2.7 mm.; fourth, 4.2 mm.

Distribution. From Tabasco to Brazil, Map 4.

Records. *Tabasco:* Teapa (C. and M. Goodnight), ♀. *Chiapas:* Río Huixtla, N. of Huixtla (T. C. Schneirla), ♀. *El Salvador:* (Kraus, 1955). *Panama:* El Valle (A. M. Chickering), ♀. ♂ :

Barro Colorado Island (A. M. Chickering), ♀, ♂. *Peru*: Dept. Huanuco; Acomayo, 2160 m. (F. Woytkowski), ♀. *Brazil*: Est. Rio de Janeiro: Teresopolis (H. Sick), ♀.

STEATODA QUAESITA (O.P. Cambridge), new combination

Figure 14.

Lithyphantes quacsitus O.P. Cambridge, 1896, *Biologia Centrali Americana*, Araneidea, vol. 1, p. 180, pl. 22, fig. 6, ♂. F.O.P. Cambridge, 1902, *ibid.*, vol. 2, p. 376, pl. 35, fig. 13, ♂. Petrunkevitch, 1911, *Bull. Amer. Mus. Nat. Hist.*, vol. 29, p. 183. Roewer, 1942, *Katalog der Araneae*, vol. 1, p. 408.

Type. Male holotype from Teapa, Tabasco, in the British Museum (Natural History).

Only the palp of the type was examined. It is probably the male of either *S. saltensis* or more likely that of *S. autumnalis*.

, STEATODA SALTENSIS, new species

Figures 19, 20; Map 4.

Lithyphantes lugubris F.O.P. Cambridge, 1902, *Biologia Centrali Americana*, Araneidea, vol. 2, p. 376 (in part), pl. 35, fig. 15c (not fig. 15b).

Types. Female holotype and one female paratype from forty miles northeast of El Salto, Durango, Mexico, Aug. 11, 1947 (W. J. Gertsch), in the American Museum of Natural History.

Description. Carapace, sternum, legs brown. Abdomen black with a light transverse anterior band; venter with a white line behind genital furrow. Eyes subequal in size. Anterior median eyes one diameter apart, three-quarters of a diameter from laterals. Posterior median eyes one diameter apart, one and three-quarters diameters from laterals. Laterals separated by three-quarters diameter. Total length of females 7.6-10.3 mm. The holotype measured total length 10.3 mm. Carapace 3.7 mm. long; 3.0 mm. wide. First femur, 4.3 mm.; patella and tibia, 4.8 mm.; metatarsus, 3.7 mm.; tarsus, 1.4 mm. Second patella and tibia, 4.0 mm.; third, 3.0 mm.; fourth, 4.7 mm.

Diagnosis. Only details of the epigynum (Fig. 20) distinguish this species from the related *Steatoda autumnalis*.

Distribution. Central Mexico (Map 4). A female paratype of *L. lugubris* which F.O.P. Cambridge thought to be immature

was collected in Bugaba, Panama. Recent Panamanian collectors have not included *S. saltensis* again.

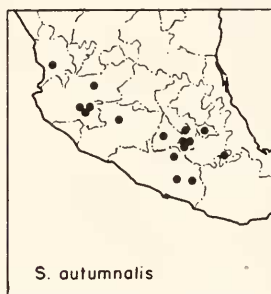
Records. Durango: 30 mi. NE. of El Salto, Aug. 11, 1947 (W. J. Gertsch), ♀. *Distrito Federal*: Contreras, May 30, 1946, 8000-9000 ft. (J.C. and D.L. Pallister), ♀. *Zacatecas*: Tena-yuca, July 14, 1943 (C. Bolivar), ♀.

STEATODA AUTUMNALIS (Banks), new combination

Figures 21, 22; Map 5.

Lithyphantes autumnalis Banks, 1898, Proc. California Acad. Sci., 3rd. ser., vol. 1, p. 240, pl. 14, fig. 6. F.O.P. Cambridge, 1902, Biologia Centrali Americana, Araneidea, vol. 2, p. 376. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 182. Roewer, 1942, Katalog der Araneae vol. 1, p. 407.

Lithyphantes clarus O.P. Cambridge, 1898, Biologia Centrali Americana, Araneidea, vol. 1, p. 252, pl. 38, fig. 6. F.O.P. Cambridge, 1902, *ibid.*, vol. 2, p. 376. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 182. Roewer, 1942, Katalog der Araneae, vol. 1, p. 407. NEW SYNONYMY.



Map 5. Distribution of *Steatoda autumnalis* (Banks).

Lithyphantes lugubris F.O.P. Cambridge, 1902, Biologia Centrali Americana, Araneidea, vol. 2, p. 376, (in part), pl. 35, fig. 15b (not 15c). Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 183. ? Banks, 1913, Proc. Acad. Nat. Sci. Philadelphia, p. 678. ? Reimoser, 1937, Ann. Naturhist. Mus. Wien, vol. 50, p. 344. Roewer, 1942. Katalog der Araneae, vol. 1, p. 408. NEW SYNONYMY.

Types. Immature, less than half grown, holotype of *Lithyphantes autumnalis* Banks, from Tepic, Nayarit, in the Museum

of Comparative Zoology. Immature holotype of *Lithyphantes clarus* from Pátzcuara, Michoacan. Female holotype of *Lithyphantes lugubris* from Omiltemi, Guerrero. The last two are in the British Museum (Natural History).

Remarks on nomenclature. Although the types of *Lithyphantes autumnalis* and *L. clarus* can not be determined with absolute certainty, *L. autumnalis* has the typical pattern of the juvenile of this species, and adults have been collected in the type locality. *L. clarus* is probably a penultimate female, judging by its coloration. The type locality is well within the range of this species. The publication date of *L. autumnalis* is May 28, 1898; that of *L. clarus*, June, 1898.

Description. Carapace, sternum, legs dark brown. Abdomen black with a white stripe around anterior margin of dorsum; venter with a short white transverse line behind genital groove. Immatures seem to have abdomen brightly colored with patches of light and dark pigment. Eyes on slight tubercles; anterior medians slightly smaller than others, one diameter apart, and one diameter from laterals. Posterior median eyes one diameter apart, one and one-half diameters from laterals. Epigynum illustrated by Figure 22. Total length of females 7.8-11.0 mm. A female measured: total length 8.7 mm. Carapace 3.7 mm. long, 3.0 mm. wide. First femur, 4.0 mm.; patella and tibia, 4.9 mm.; metatarsus, 3.5 mm.; tarsus, 1.3 mm. Second patella and tibia, 3.3 mm.; third, 3.0 mm.; fourth, 4.4 mm. The male is not known.

Distribution. Central Mexico. Map 5. The records of Costa Rica and Panama (F.O.P. Cambridge, 1902; Banks, 1913; Reimoser, 1939) are probably erroneous.

Records. *Nayarit*: Tepic. *Jalisco*: Nevado de Colima; Tlaquepague; W. side of Lake Sayula; Tizapán. *Mexico*: Ixtapan de la Sal. *Distrito Federal*: Santa Rosa. *Morelos*: Oaxtepec; Acatlipa; Cuantla. *Tlaxcala*: Tlaxcala. *Puebla*: Tehuacan. *Guerrero*: Taxco; 23 mi. S. of Chilpancingo.

STEATODA TRANSVERSA (Banks), new combination

Figures 23-27; Map 6.

Lithyphantes transversus Banks, 1898, Proc. California Acad. Sci., 3rd ser., vol. 1, p. 240, pl. 14, fig. 5, ♀. Petrunkevitch, 1911, Bull. Amer. Mus.

Nat. Hist., vol. 29, p. 183. Roewer, 1942, Katalog der Araneae, vol. 1, p. 408.

Type. One female from El Taste, Baja California, in the Museum of Comparative Zoology.

Description. Carapace, sternum, legs, orange-brown. Abdomen dark purplish with white spots on dorsum and indistinct white spots on venter. Anterior lateral eyes largest, posterior laterals slightly smaller, median eyes subequal and smallest. Anterior medians three-quarters diameter apart, the same distance from laterals. Posterior medians half their diameter apart, one diameter from laterals. Chelicerae of male slightly swollen and endites enlarged. Epigynum (Fig. 24) with two dark spots



Map 6. Distribution of *Steatoda transversa* (Banks).

slightly more than their diameter apart. Male palpus illustrated by Figures 26, 27. A female from Arizona measured: total length, 4.3 mm. Carapace 1.6 mm. long, 1.3 mm. wide. First patella and tibia, 1.4 mm.; second, 1.2 mm.; third, 1.0 mm. Fourth femur, 1.3 mm.; patella and tibia, 1.7 mm.; metatarsus, 0.9 mm.; tarsus, 0.7 mm. A male from Arizona measured: total length, 3.1 mm. Carapace 1.6 mm. long, 1.1 mm. wide. First patella and tibia, 1.3 mm.; second, 1.1 mm.; third, 0.9 mm. Fourth femur, 1.2 mm.; patella and tibia, 1.4 mm.; metatarsus, 0.9 mm.; tarsus, 0.6 mm.

Natural History. Roth collected this species in Arizona by sweeping an alfalfa field.

Distribution. Texas, Arizona to Oaxaca. Map 6.

Records. Texas: Hays Co.; Hidalgo Co.; Edinburg. Arizona: Yuma Co.: Yuma Mesa. California: Riverside Co.: Indio. Sonora: 10 mi. S. of Hermosillo. Nayarit: Acaponeta; Jesús María. Jalisco: Plan de Barrancas. Colima: 20 mi. N.; 7 mi. S. of Colima; Manzanillo. Morelos: Alpuyecca. Veracruz: Plan del Río. Oaxaca: Oaxaca.

STEATODA QUADRIMACULATA (O.P. Cambridge),

new combination

Figures 28-31; Map 7.

Asagena quadrimaculata O.P. Cambridge, 1896, *Biologia Centrali Americana*, Araneidea, vol. 1, p. 189, pl. 23, fig. 12, ♂. Simon, 1897, *Proc. Zool. Soc. London*, p. 864. F.O.P. Cambridge, 1902, *Biologia Centrali Americana*, Araneidea, vol. 2, p. 378, pl. 35, fig. 17, ♂. Petrunkevitch, 1911, *Bull. Amer. Mus. Nat. Hist.*, vol. 29, p. 171. Chickering, 1936, *Trans. Amer. Micros. Soc.*, vol. 55, p. 451. Bryant, 1940, *Bull. Mus. Comp. Zool.*, vol. 86, p. 302. Roewer, 1942, *Katalog der Araneae*, vol. 1, p. 397. Bonnet, 1955, *Bibliographia Araneorum*, vol. 2, p. 757.

Lithyphantes hermosa Banks, 1909, *Proc. Acad. Nat. Sci. Philadelphia*, vol. 61, p. 205, pl. 6, fig. 44, ♀. Petrunkevitch, 1911, *Bull. Amer. Mus. Nat. Hist.*, vol. 29, p. 182. Reimoser, 1939, *Anu. Naturhist. Mus. Wien*, vol. 50, p. 344. Roewer, 1942, *Katalog der Araneae*, vol. 1, p. 407. NEW SYNONYMY.

Lithyphantes tricolor Chamberlin and Ivie, 1944, *Bull. Univ. Utah, biol. ser.*, vol. 8, no. 5, p. 44, figs. 67-74, ♀. NEW SYNONYMY.

Asagena marcuzzii Caporiacco, 1955, *Acta Biol. Venezuelica*, vol. 1, p. 330, fig. 23, ♀. NEW SYNONYMY.

Types. Male holotype of *Asagena quadrimaculata* from Antigua, Guatemala, in the British Museum (Natural History). Female holotype of *Lithyphantes hermosa* from Punta Arenas, Costa Rica, in the Museum of Comparative Zoology. Female holotype of *Lithyphantes tricolor* from Savannah Beach, Georgia, in the American Museum of Natural History. Female holotype of *Asagena marcuzzii* from Maiquetía, D.F., Venezuela, in the Museo de Biología, Universidad Central di Venezuela.

Description. Carapace, sternum, legs yellow to orange, some

duskiness on femora. Abdomen dark purple with 6 or 7 dorsal white spots, a U-shaped light spot on venter and smaller spots on each side. Anterior median eyes slightly smaller than others, separated by three-quarters diameter, one-third diameter from laterals. Posterior medians separated by one-third diameter, one-half to one diameter from laterals. Lateral eyes not separated. Chelicerae and endites of males enlarged. Epigynum with a dark spot each in a pair of depressions (Fig. 29). Male palpus illustrated by Figures 30, 31. Total length of females 2.7-4.0 mm. A female from Tamaulipas measured total length, 3.6 mm. Carapace 1.36 mm. long, 0.98 mm. wide. First patella and tibia, 1.35 mm.; second, 1.13 mm.; third, 0.95 mm. Fourth femur, 1.17 mm., patella and tibia, 1.42 mm.; metatarsus, 0.78; tarsus, 0.52 mm. Total length of males, 2.2-3.2 mm. A male from



Map 7. Distribution of *Steatoda quadrimaculata* (O.P. Cambridge).

Tamaulipas measured: total length, 3.1 mm. Carapace 1.60 mm. long, 1.14 mm. wide. First patella and tibia, 1.54 mm.; second, 1.36 mm.; third, 1.10 mm. Fourth femur, 1.40 mm.; patella and tibia, 1.74 mm.; metatarsus, 1.20 mm.; tarsus, 0.60 mm.

Distribution. Southern United States to northern South America. Map 7.

Records. *Florida:* Alachua Co.; Collier Co.; Highlands Co. *Alabama:* Baldwin Co. *Mississippi:* Covington Co. *Louisiana:* Beauregard Par.; St. Helena Par.; Shreveport. *Texas:* Chambers

Co., Hidalgo Co.; Starr Co. *Tamaulipas*: 20 mi. N. of Lemon; 2 mi. E. of Nuevo Morelos; 13-15 mi. S., 27 mi. N., 35 mi. N. of Villa Juárez. *San Luis Potosí*: Tamazunchale; 2 mi. N. of Tamazunchale; 5 mi. N., 10 mi. N., 13 mi. N. of Valles; Valles. *Hidalgo*: Chapulhuacán. *Veracruz*: Córdoba. *Nayarit*: Campostela; La Libertad. *Colima*: 25 mi. E. of Mazamitla. *Guerrero*: Lo Bajo; Arcelia; 32 mi. N. of Acapulco. *Oaxaca*: Palomares; Soledad; Tolosa; San Felipe; Tehuantepec. *Chiapas*: Las Cruces. *Is. Revillagigedo*: Socorro Is. *Panama*: (Chickering, 1936). *Cuba*: (Bryant, 1940). *Lesser Antilles*: (Simon, 1897). *Venezuela*: (Simon, 1897).

STEATODA FULVA group

This group is represented by three similar species which are sympatric over most of their ranges.

Description. Carapace, sternum, legs orange to brown; sometimes legs red-brown with distal segments lighter. Abdomen purplish brown with dorsal white spots (Figs. 51, 52, 54, 55), venter with a white spot posterior to the genital groove, another anterior to spinnerets, both frequently connected by a white line. *S. pulcher* may be differently colored. In all three species eyes subequal in size; or frequently anterior medians larger than others, rarely slightly smaller. Anterior medians one-half to one diameter apart, one-quarter to one-half their diameter from laterals. Posterior eyes equi-distant, two-thirds to one diameter apart. Lateral eyes slightly separated or touching each other. The genitalia and measurements are similar.

Variation. The coloration is variable in *S. medialis* and *S. pulcher*. The epigyna of all three species, the palp of *S. medialis* and *S. pulcher* are variable.

Natural History. Virtually nothing is known of the natural history of these three species. It is assumed that all three are found in arid situations under stones, logs and in debris.

Key to females of the STEATODA FULVA group

1. Anterior edge of "transverse bridge" of epigynum pointing anterior; "bridge" semicircular in cross-section (Figs. 43, 44) *medialis*

1. Anterior edge of "bridge" of epigynum, straight or pointing posterior. (Figs. 46, 49)2
2. Posterior edge of "bridge" with two lobes each as wide as intermediate area, bridge flat in cross-section. (Fig. 49, 50) ...*pulcher*
2. Posterior edge of "bridge" more or less straight with lobes widely separated. (Figs. 46, 47)*fulva*

Key to males of the STEATODA FULVA group

1. Palpus in ventral view with large portion of median apophysis showing on mesal side, outside embolic tube (Figs. 34-36)*medialis*
1. Palpus in ventral view with only edge of median apophysis showing on mesal side outside of embolic tube (Figs. 32, 38, 41)2
2. Palpus in ventral view with area surrounded by embolic tube as high as wide, subcircular; basal membrane of embolus covering less than one half of area enclosed by embolus (Figs. 32, 33)*fulva*
2. Palpus in ventral view with area surrounded by embolic tube elliptical, much wider than high (Figs. 39, 41); or with area surrounded by embolic tube subcircular with basal membrane of embolus covering more than half of enclosed area (Fig. 38)*pulcher*

STEATODA MEDIALIS (Banks), new combination

Figures 34-36, 42-44, 53-55; Map 8.

Steatoda distincta Thorell, 1877, Bull. U.S. Geol. Surv., vol. 3, p. 485. Banks, 1893, Jour. New York Ent. Soc., vol. 1, p. 124; ♀ 1895, Ann. New York Acad. Sci., vol. 8, p. 423; 1910, Bull. U.S. Natl. Mus., no. 72, p. 21. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 188. Not *Steatoda distincta* (Blackwall).

Lithyphantes punctulata Marx, 1898, in Banks, Proc. California Acad. Sci., 3rd ser., vol. 1, p. 239, pl. 14, fig. 4, ♀. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 183. Roewer, 1942, Katalog der Araneae, vol. 1, p. 408. NEW SYNONYMY.

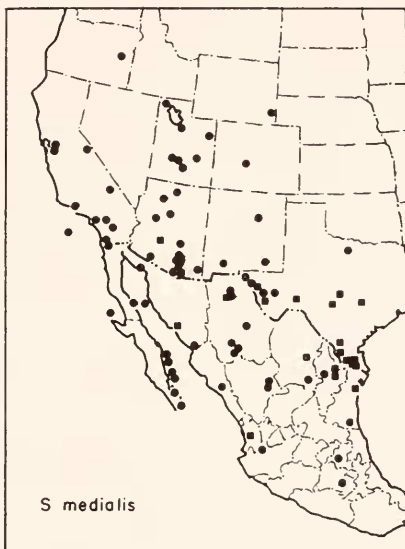
Lithyphantes medialis Banks, 1898, Proc. California Acad. Sci., 3rd ser., vol. 1, p. 240, pl. 14, fig. 3, ♀. Banks, 1902, Proc. U.S. Natl. Mus., vol. 25, p. 214. Banks, 1910, Bull. U.S. Natl. Mus., no. 72, p. 21. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 183.

Lithyphantes distincta, Chamberlin, 1933, Bull. Univ. Utah, biol. ser., vol. 2, no. 2, p. 8, pl. 1, fig. 9, ♀. Gertsch, 1935, Amer. Mus. Novitates, no. 792, p. 21. Roewer, 1942, Katalog der Araneae, vol. 1, p. 408.

Types. Female type of *Steatoda distincta* from Colorado in the Riksmuseum, Stockholm. One female syntype and fragments of two juveniles of *Lithyphantes punctulata* are alleged to have come from Las Palmas, Baja California, in the Museum of Comparative Zoology. Two female syntypes of *Lithyphantes medialis*

from San José del Cabo, Baja California, in the Museum of Comparative Zoology.

Remarks on nomenclature. The name *Steatoda distincta* Thorell is not available since *Latrodectus distincta* Blackwall, 1859 (Ann. Mag. Nat. Hist., ser. 3, vol. 4, p. 260) probably belongs to this genus and had been placed by Roewer (1942) in *Lithyphantes*. Although *Lithyphantes punctulata* has page priority over *L. medialis*, Banks' name *medialis* is here used. I doubt that the type specimens of *L. punctulata* came from Baja California as indicated; they appear to come from the eastern



Map 8. Distribution of *Steatoda medialis* (Banks). Squares: many spotted coloration; circles: few spotted coloration.

portion of its range. As the type locality is uncertain, the name *L. medialis* seems preferable.

Description. Epigynum illustrated by Figures 43, 44; male palpus by Figures 34-36. Total length of females 3.2-6.5 mm. A female from California measured: total length 5.6 mm. Carapace 2.1 mm. long, 1.7 mm. wide. First femur, 2.7 mm.; patella and tibia, 2.9 mm.; metatarsus, 2.3 mm.; tarsus, 0.9 mm. Second

patella and tibia, 2.3 mm.; third, 1.9 mm.; fourth, 2.9 mm. Total length of males 2.9-5.8 mm. A male from California measured: total length 5.4 mm. Carapace 2.4 mm. long, 1.6 mm. wide. First femur, 3.0, mm.; patella and tibia, 3.4 mm.; metatarsus, 2.7 mm.; tarsus, 1.2 mm.; Second patella and tibia, 2.9 mm.; third, 2.4 mm.; fourth, 3.4 mm.

Variation. There is considerable individual variation in the shape of the epigynum, and relative eye size. The palpal tibia is long in western specimens (Fig. 36), short in eastern ones (Fig. 34).

The difference in dorsal marking is striking. Eastern specimens commonly have four rows of spots on the dorsum of abdomen (Fig. 55), western ones have only one row of large spots with one spot on each side (Fig. 54). Specimens from the center of the range from Utah to central Mexico often lack spots. A number of specimens from the Gulf of California had three lines of spots. The type of *L. punctulata* is of the variety with four rows of spots, *L. medialis* of the variety with one row. Map 8 shows the variety having four rows of spots as squares, the fewer-spotted, or those lacking spots, by circles. Collections having both patterns or the few individuals of intermediate pattern are also indicated by circles.

Natural History. This species has been collected in Colorado under stones in an arid area at 7000 feet elevation.

Distribution. Wyoming, Utah to Hidalgo. Map 8.

Records. *Texas:* Austin; El Paso; Hidalgo Co.; Hudspeth Co.; Jeff Davis Co.; Kerr Co.; Llano Co.; Presidio Co.; Starr Co.; Terrell Co.; Webb Co.; Wise Co.; Zapata Co. *Wyoming:* Hawk Springs, Goshen Co. Aug. 5, 1952 (B. Malkin). *Colorado:* Chaffee Co. *New Mexico:* Eddy Co.; Luna Co.; San Miguel Co. *Utah:* (Chamberlin and Ivie, 1933); Emery Co.; Salt Lake City; Sevier Co.; Uintah Co.; Wayne Co. *Arizona:* (Banks, 1902; Gertsch, 1935); Cochise Co.; Coconino Co.; Gila Co.; Organ Pipe Natl. Mon.; Phoenix; Pima Co.; Santa Cruz Co.; Tucson. *Oregon:* Malheur Co.: Malheur Riv. Canyon, Sept. 10, 1949 (V. Roth). *California:* Berkeley; Contra Costa Co.; Inyo Co.; Los Angeles Co.; Mono Co.; Riverside Co.; San Bernardino Co.; San Diego Co.; San Nicolas Isl.; Santa Barbara. *Tamaulipas:* 20 mi. E. of Villa Juárez; Arroyo Chorreras. *Nuevo León:* nr. Monterey; 30 mi. E. of General Bravo; *China. Coahuila:* 5 mi.

W. of Saltillo; La Gloria. *Chihuahua*: Primavera, 5500-6000 ft.; Huejotitlán; 50 mi. S. Ahumada; 5 mi. S. Chihuahua; 6 mi. S. Gallego; La Saucedá, 7000 ft.; Valle de Olivos, 5000 ft. *Sonora*: Punta Penasco; 15 mi. W. Agiabambo; Guaymas; Navajoa; Isla Pelicano. *Baja California*: San José del Cabo; 45 mi. E. of Tecate, 3600 ft.; Isla. Cedros; Isla. Habana; Sal Si Puedes Isl.; Carman Isl.; Coronados Isl.; Smith's Isl.; La Paz; Santa Cruz Isl. *Durango*: San Juan del Río; La Loma. *Sinaloa*: 6 mi. S. Caliacán. *Nayarit*. *Jalisco*: 20 mi. N. of La Quemada. *Distrito Federal*: Teotihuacán. *Hidalgo*: Ixmiquilpan.

STEATODA FULVA (Keyserling), new combination

Figures 32, 33, 45-47, 52; Map 9.

Lithyphantes fulvus Keyserling, 1882, Die Spinnen Amerikas, vol. 2, pt. 1, pl. 6, fig. 89, ♀. Marx, 1889, Proc. U.S. Natl. Mus. vol. 12, p. 522. Banks, 1899, Proc. Ent. Soc. Washington, vol. 4, p. 189; 1900, Proc. Acad. Nat. Sci. Philadelphia vol. 52, p. 533; 1904, *ibid.*, vol. 56, p. 653; 1910, Bull. U.S. Natl. Mus., no. 72, p. 21. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 182. Comstock, 1912, The spider book, p. 362, fig. 368, ♀. Worley and Pickwell, 1931, Univ. Nebraska Studies, vol. 27, p. 27. Fox, 1940, Proc. Biol. Soc. Washington, vol. 53, p. 41. Comstock, 1940, The spider book, rev. ed., p. 377, fig. 368, ♀. Chamberlin and Ivie, 1941, Bull. Univ. Utah, biol. ser., vol. 6, no. 3, p. 11. Roewer, 1942, Katalog der Araneae, vol. 1, p. 408. Chamberlin and Ivie, 1944, Bull. Univ. Utah, biol. ser., vol. 8, no. 5, p. 44.

Lithyphantes parvula Banks, 1898, Proc. California Acad. Sci., 3rd. ser., vol. 1, p. 238, pl. 14, fig. 1, ♀, ♂. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 183. Roewer, 1942, Katalog der Araneae, vol. 1, p. 408. NEW SYNONYMY. Not *Steatoda parvula* Saito, 1933.

Lithyphantes pulcher, Banks, 1898, Proc. California Acad. Sci., 3rd. ser., vol. 1, p. 238, pl. 14, figs. 7, 8, ♀. Chamberlin, 1924, *ibid.*, 4th ser., vol. 12, p. 640. Banks et al., 1932, Publ. Univ. Oklahoma Biol. Surv., vol. 4, no. 1, p. 22. Not *Lithyphantes pulcher* Keyserling.

Lithyphantes venusta Marx, 1898, in Banks, Proc. California Acad. Sci., 3rd. ser. vol. 1, p. 239, pl. 14, fig. 2, ♀. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 183; Roewer, 1942, Katalog der Araneae, vol. 1, p. 408. NEW SYNONYMY.

Teutana nesiotis Chamberlin, 1924, Proc. California Acad. Sci., 4th ser., vol. 12, p. 639, fig. 80, ♀. Roewer, 1942, Katalog der Araneae, vol. 1, p. 417. NEW SYNONYMY.

Types. Female lectotype of *Lithyphantes fulvus* from Spring Lake, Sevier County, Utah, designated by Fox, 1940, in the United States National Museum. Three male and one female syntypes of *Lithyphantes parvula* from San José del Cabo, Baja California, in the Museum of Comparative Zoology. Female type of *Lithyphantes venusta* from San Francisquito, Baja California, destroyed. Female holotype of *Teutana nesiotus* from Granite Island, north of Angel de la Guarda Island, Gulf of California, in the California Academy of Sciences; one paratype in the Museum of Comparative Zoology.



Map 9. Distribution of *Steatoda fulva* (Keyserling).

Description. Epigynum rather small and indistinct (Figs. 46, 47), male palpus illustrated by Figures 32 and 33. Total length of females, 3.0-5.9 mm. A female from California measured: total length 4.7 mm. Carapace 2.1 mm. long, 1.6 mm. wide. First patella and tibia, 2.2 mm.; second, 1.8 mm.; third, 1.5 mm. Fourth femur, 2.0 mm.; patella and tibia, 2.3 mm.; metatarsus, 1.5 mm.; tarsus, 0.8 mm. Total length of males.

2.4-5.0 mm. A male from California measured: total length 5.0 mm. Carapace 2.3 mm. long, 1.9 mm. wide. First patella and tibia, 2.8 mm.; second, 2.4 mm.; third, 2.1 mm. Fourth femur, 2.7 mm.; patella and tibia, 3.1 mm.; metatarsus, 2.3 mm.; tarsus, 0.9 mm.

Natural History. This species is probably found under stones in dry areas. It has also been collected in a house in Yuma, Arizona.

Distribution. Southern and western United States south to central Mexico. Map 9.

Records. *Georgia:* (Fox, 1940; Chamberlin and Ivie, 1944). *Florida:* (Banks, 1904); Alachua Co.; Lake Co.; Putnam Co. *Alabama:* (Banks, 1900). *Louisiana:* (Banks, 1899). *Nebraska:* (Worley and Piekwell, 1931); Platte Co.; Columbus, June 26, 1946 (M. H. Muma). *Oklahoma:* (Banks et al., 1932). *Texas:* (Fox, 1940); Brewster Co.; Dallam Co.; El Paso; Hidalgo Co.; Howard Co.; Hudspeth Co.; Llano Co. Somervell Co.; Starr Co. *Colorado:* Mesa Co. *New Mexico:* Hidalgo Co. *Idaho:* Boise, June 15, 1941 (B. Malkin). *Utah:* Carbon Co.; Salt Lake City; Sevier Co.; Tooele Co.; Weber Co. *Nevada:* Nye Co. *Arizona:* Cochise Co.; Coconino Co.; Maricopa Co.; Organ Pipe Cactus Natl. Mon.; Pima Co.; Pinal Co.; Santa Cruz Co.; Yuma Co. *Oregon:* Lake Co.; Umatilla. *California:* Imperial Co.; Inyo Co.; Los Angeles Co.; Mono Co.; Riverside Co.; San Bernardino Co.; San Diego Co.; Ventura Co.

STEATODA PULCHER (Keyserling), new combination

Figures 37-41, 48-51; Map 10.

Lithyphantes pulcher Keyserling, 1882, Die Spinnen Amerikas, vol. 2, pt. 1, p. 137, pl. 6, fig. 85, ♀. Marx, 1898, Proc. U.S. Natl. Mus., vol. 12, p. 522. Banks, 1910, Bull. U.S. Natl. Mus., no. 72, p. 21 (in part). Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 183 (in part). Roewer, 1942, Katalog der Araneae, vol. 1, p. 408 (in part).

Type. Female holotype from Washington Territory in the Muséum d'Histoire Naturelle in Paris.

Description. Epigyna illustrated by Figures 49, 50; male palpus by Figures 37-41. Total length of females 3.0-6.8 mm. A female from Coahuila measured: total length 5.0 mm. Carapace 1.8 mm. long, 1.5 mm. wide. First femur 2.2 mm.; patella

and tibia, 2.6 mm.; metatarsus, 1.8 mm.; tarsus, 0.86 mm. Second patella and tibia 2.0 mm.; third, 1.7 mm.; fourth, 2.6 mm. Total length of males 2.8-5.8 mm. A male from Coahuila measured: total length, 3.2 mm. Carapace, 1.4 mm. long, 1.1 mm. wide. First femur, 1.7 mm.; patella and tibia, 2.1 mm.; metatarsus, 1.5 mm.; tarsus, 0.7 mm. Second patella and tibia 1.6 mm.; third, 1.2 mm.; fourth, 2.0 mm.

Variation. Some specimens have the fourth leg longer than the first, in others the first is longest. There is considerable individual variation in the shape of the epigynum (Figs. 49,



Map 10. Distribution of *Steatoda pulcher* (Keyserling).

50). All the largest specimens came from northern California and Oregon, most of the smallest from Texas; specimens from other regions are intermediate in size. The largest specimens from northern California and Oregon are also the lightest in color. In specimens from this region, the abdomen is usually white with black spots, as in eastern *S. albomaculata* (Fig. 65)

and the venter is as in *S. albomaculata* from the Rocky Mountains (Fig. 64). The smallest specimens from Texas are also often the darkest.

The male palpus shows a surprising amount of variation; however, the cline of variation here does not agree with the clines for color and size. The palpus of males from northern California (Fig. 38) is very similar to that of *S. fulva*; however, it has a larger white membrane on the ectal side of the palp at the inner side near the base of the embolus; the membrane covers more than one half the circle made by the embolus. Males from Arizona, Texas and Coahuila have a wide palpus (Figs. 39, 40). Unfortunately we do not have males from southern California or eastern Arizona, but they are expected to be intermediate in this character. Arizona and Texas specimens still have the large white membrane on the base of the embolus (Fig. 39), but this structure becomes smaller farther south (Fig. 40). Males from central and southern Mexico have a narrower palpus. The white membrane, however, is smaller (Figs. 40, 41), unlike that of the narrow California palpus. In Mexico the palpus still differs from that of *S. fulva* in that the embolus of *S. pulcher* describes an ellipse wider than high (Figs. 40, 41), while that of *S. fulva* is higher than wide.

Natural History. This species has been collected under rocks in desert in Oregon.

Distribution. Pacific coast states, southwest to Oaxaca. Map 10. In several papers Mello-Leitão refers to this species as having been found in South America. I assume he made a mistake in identification.

Records. *Texas:* Big Bend Natl. Pk.; Concho Co.; Kendall Co.; McCulloch Co.; Terrell Co. *Colorado:* Archuleta Co.; Piedra, 7000 ft. (H. and L. Levi). *New Mexico:* Otero Co. *Arizona:* Cochise Co.; Grand Canyon Natl. Pk.; Navajo Co.; Pima Co. *Oregon:* Deschutes Co.; 5 mi. S. of Redmond; Jackson Co.; Klamath Co.; Lake of the Woods; Lake Co.; Lake Albert. *California:* Eldorado Co.; Contra Costa Co.; Kings Canyon Natl. Pk.; Modoc Co.; Mono Co.; Plumas Co.; Riverside Co.; San Bernardino Co.; Shasta Co.; Sierra Co.; Siskiyou Co.; Tulare Co. *Coahuila:* 5 mi. W. of Saltillo; 20 mi. E. of San Pedro. *Chihuahua:* Santa Barbara; Primavera, 5500-6000 ft.; Matachic;

20 mi. W. of Matachic. *Durango*: Las Puentes, 700 ft.; Otinapa, 8200 ft. *Jalisco*: 20 mi. N. of La Quemada; Ajijic; Plan de Barrancas; west side of Lake Sayula; nr. Tequila. *Hidalgo*: 5 mi. S. of Zimapán. *Michoacan*: Tzararacua Falls nr. Uruapan. *Morelos*: Acatlipa; Cocoyoc; Alpoyeca; 10 mi. S. of Temixco. Coajomulco; Cuernavaca; 25 km. S. Cuernavaca. *Puebla*: Atlixco; 5 mi. N. of Tehuacán; Tehuacán; 12 mi. N. Acatlán; 7 mi. S. Tlacotepec; Tlacotepec. *Veracruz*: Perote. *Guerrero*: Hoajojutla; Taxco; Mexcala. *Oaxaca*: Oaxaca (many collections); Monte Alban.

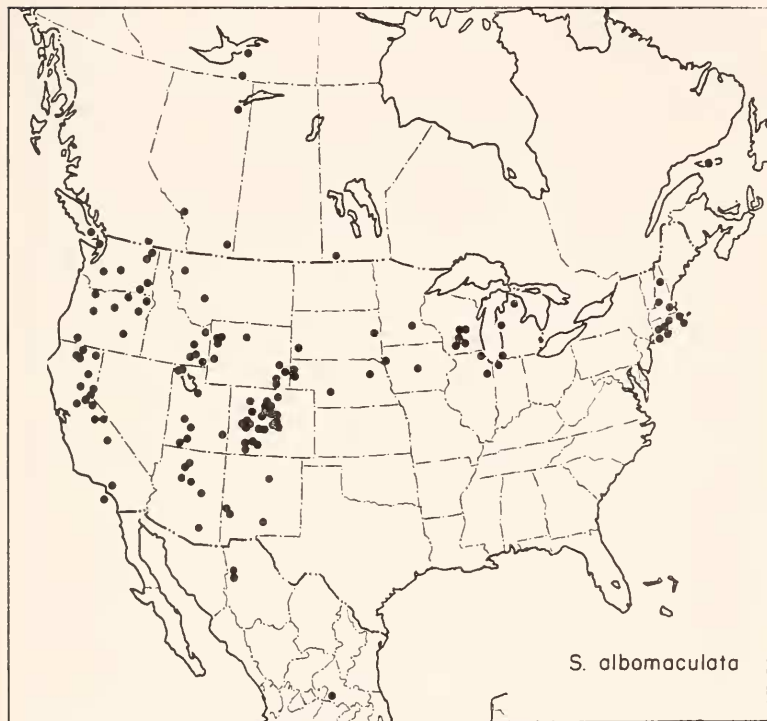
STEATODA ALBOMACULATA (De Geer), new combination

Figures 56-65; Map 11.

- Aranca albomaculata* De Geer, 1778, Mémoires pour servir à l'histoire des Insectes, vol. 7, p. 257, pl. 15, figs. 2-4, ♀.
- Eucharia corollata*, C.L. Koch, 1837, Übersicht des Arachnidensystems, vol. 1, p. 8.
- Asagena corollata*, C.L. Koch, 1840, in Fürnrohr, Die Fauna von Regensburg, p. 401.
- Steatoda corollata*, Thorell, 1856, Recensio Critica Araneorum, p. 85; Emerton, 1882, Trans. Connecticut Acad. Sci., vol. 6, p. 21, pl. 4, fig. 5, ♀; 1902, The common spiders, p. 121, fig. 285, ♀; 1924, Canadian Ent., vol. 56, p. 124.
- Lithyphantes corollatus*, Thorell, 1869, On European spiders, p. 94. Emerton, 1876, Psyche, vol. 1, p. 130; 1877, Proc. Boston Soc. Nat. Hist., vol. 19, p. 70. Thorell, 1877, Bull. U.S. Geol. Surv. vol. 3, no. 2, p. 47. Keyserling, 1884, Die Spinnen Amerikas, vol. 2, pt. 1, p. 129, pl. 6, fig. 81, ♀, ♂. Marx, 1889, Proc. U.S. Natl. Mus., vol. 12, p. 522. Banks, 1901, Proc. Acad. Nat. Sci., Philadelphia, 1901, p. 579; 1895a, Jour. New York Ent. Soc., vol. 3, p. 84; 1895b, Ann. New York Acad. Sci., vol. 8, p. 432; 1902, Proc. U.S. Natl. Mus., vol. 25, p. 214. Bryant, 1908, Occas. Papers Boston Soc. Nat. Hist., vol. 7, p. 17. Banks, 1910, Bull. U.S. Natl. Mus., no. 72, p. 21. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 182. Comstock, 1912, The spider book, p. 362, fig. 367, ♀. Emerton, 1920, Trans. Roy. Canadian Inst., vol. 12, p. 312. Crosby and Bishop, 1928, Mem. Cornell Agr. Exp. Sta., no. 101, p. 1039. Chamberlin, 1928, Canadian Ent., vol. 60, p. 93. Worley and Pickwell, 1931, Univ. Nebraska Studies, vol. 27, p. 27. Worley, 1932, Publ. Univ. Washington Biol., vol. 1, p. 25. Chickering, 1932, Papers Michigan Acad. Sci., vol. 15, p. 351. Chamberlin and Ivie, 1933, Bull. Univ. Utah, biol. ser., vol. 2, p. 8. Gertsch, 1935, Amer. Mus.

Novitates, no. 792, p. 21. Comstock, 1940, The spider book, rev. ed., p. 377, fig. 367, ♀. Fox, 1940, Proc. Biol. Soc. Washington, vol. 53, p. 41. Probably not *Aranea corollata* Linnaeus, 1758.

Lithyphantes albomaculatus, Simon, 1914, Arachnides de France, vol. 6, p. 282. Wiehle, 1937, in Dahl, Die Tierwelt Deutschlands, pt. 33, p. 200, figs. 222-227, ♀, ♂. Gertsch, 1939, Amer. Mus. Novitates, no. 1032, p. 4. Roewer, 1942, Katalog der Aranaea, vol. 1, p. 405. Lowrie, 1942,



Map 11. American distribution of *Steatoda albomaculata* (De Geer).

Bull. Chicago Acad. Sci., vol. 6, p. 169; 1948, Ecology, vol. 29, p. 338. Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 78, figs. 47-50, ♀, ♂. Kurata, 1949, Canadian Ent., vol. 81, p. 127. Levi and Levi, 1951, Zoologica, vol. 36, p. 220. Kaston, 1953, How to know the spiders, p. 163, fig. 407, ♀. Locket and Millidge, 1953, British spiders, vol. 2, p. 55, fig. 37, ♀, ♂. Levi and Field, 1954, Amer. Mid-

land Nat., vol. 51, p. 444. Kaston, 1955, Trans. Illinois Acad. Sci., vol. 47, p. 166.

Types. The type came from the shore of the Baltic Sea.

Description. Carapace, sternum, legs, dark brown. Abdomen black often with a white line along anterior edge, venter black with white marks (Fig. 64). Eastern specimens may have abdomen white or white with black marks, sometimes in the form of a series of anterior pointing triangles making a median dorsal black line. Eyes subequal in size, laterals usually slightly separated from each other. The endites of the male have tubercles. Epigynum illustrated by Figure 58, male palpus by Figures 59-61. Total length of females, 4.0-8.0 mm. A female from Colorado measured: total length, 6.1 mm. Carapace 2.0 mm. long, 1.8 mm. wide. First femur, 2.6 mm.; patella and tibia, 2.7 mm.; metatarsus, 2.1 mm.; tarsus, 1.0 mm. Second patella and tibia, 2.2 mm.; third, 1.8 mm.; fourth, 2.6 mm. Total length of males, 4.3-6.8 mm. A male from Colorado measured: total length, 4.8 mm. Carapace 2.2 mm. long, 1.6 mm. wide. First femur, 2.9 mm.; patella and tibia, 3.5 mm.; metatarsus, 2.6 mm.; tarsus 1.1 mm. Second patella and tibia 2.6 mm.; third, 2.0 mm.; fourth, 3.2 mm.

Variation. The coloration in eastern specimens is light (Fig. 65) while that of western ones is usually dark, the abdomen of the latter usually being black with only a white line along the anterior edge and a ventral white mark. The shape of the epigynum is quite variable. The median lobe may be much wider than long or longer than wide. The tip of the projecting radix of the palpus varies in shape. However these differences are apparently not geographic.

Natural History. This species is very common in the Colorado mountains where it is found under stones in dry, open, areas up to timberline and down to the foothills where *Latrodectus* replaces it in similar habitats. Several spiders with numerous egg sacs are found together, along with the remains of insects, often ants. Kaston (1948) records egg sacs to be 4.5-8.0 mm. in diameter containing 20-33 tan eggs. In Europe this species is also black in color in the mountains, although black individuals may also be found in other areas (Wiehle, 1937).

Distribution. Southern England, Europe, North Africa, Siberia, China, Kamchatka (Wiehle, 1937). Common in western

states and northeastern states. South to central Mexico, north to Great Slave Lake; South America. Map 11. Judging by its wide distribution in North America and its color variation in different parts of the range, this species is native to North America as well as Europe.

Records. *Quebec:* (Emerton, 1924). *Manitoba:* (Emerton, 1920). *Northwest Territories:* (Kurata, 1949). *Alberta:* (Emerton, 1920); Medicine Hat; Lake Athabasca. *British Columbia:* (Emerton, 1920); Cascade; Mt. Arrowsmith. *New Hampshire:* Cheshire Co. *Massachusetts:* Barnstable Co.; Dukes Co.; Essex Co. *Connecticut:* New London Co. (Kaston, 1948). *New York:* (Crosby and Bishop, 1928); Nassau Co.; Suffolk Co. *Michigan:* (Chickering, 1932; Lowrie, 1948); Oceana Co. *Indiana:* (Lowrie, 1942, 1948). *Wisconsin:* (Levi and Field, 1954); Dane Co.; Iowa Co.; Sauk Co. *Illinois:* (Kaston, 1955); Kankakee Co. *Minnesota:* Hennepin Co. *Iowa:* Ames; Sioux City. *South Dakota:* Brookings; Custer Co. *Nebraska:* (Worley and Pickwell, 1931); Boone Co.; Scotts Bluff Co. *Montana:* (Gertsch, 1939); Helena. *Wyoming:* (Levi and Levi, 1951); Cheyenne; Goshen Co.; Lincoln Co.; Niobara Co.; Teton Co.; Washakie Co. *Colorado:* (Banks, 1895b; Fox, 1940); Archuleta Co.; Boulder Co.; Chaffee Co.; El Paso Co.; Gilpin Co.; Gunnison Co.; Hinsdale Co.; Jefferson Co.; Lake Co.; Larimer Co.; Mineral Co.; Rio Grande Co.; Routt Co.; Teller Co. *New Mexico:* Catron Co.; Otero Co.; San Miguel Co. *Idaho:* Bannock Co.; Bear Lake Co.; Bingham Co.; Fremont Co.; Power Co. *Utah:* (Chamberlin and Ivie, 1933; Fox, 1940); Bryce Canyon Natl. Pk.; Kane Co.; Millard Co.; San Juan Co.; Sevier Co. *Arizona:* (Banks, 1902); Flagstaff; Grand Canyon Natl. Pk.; Navajo Co.; Pima Co. *Washington:* (Worley, 1932); Mt. Ranier Natl. Pk.; San Juan Co.; Stevens Co.; Walla Walla; Whitman Co. *Oregon:* Baker Co.; Deschutes Co.; Harney Co.; Hood River Co.; Jackson Co.; Unatilla Co.; Wallowa Co.; Wheeler Co. *California:* Alpine Co.; Eldorado Co.; Inyo Co.; Lassen Co.; Los Angeles Co.; Modoc Co.; Mono Co.; Nevada Co.; Placer Co.; Sacramento Co.; Siskiyou Co.; Yosemite Natl. Pk.; Yuba Co. *Chihuahua:* Los Canoas Babicora; 7700 ft. summit NE of San José Babicora; Matachic. *San Luis Potosí:* 12 mi. W. of Arriaga.

STEATODA AMERICANA (Emerton), new combination

Figures 66-69; Map 12.

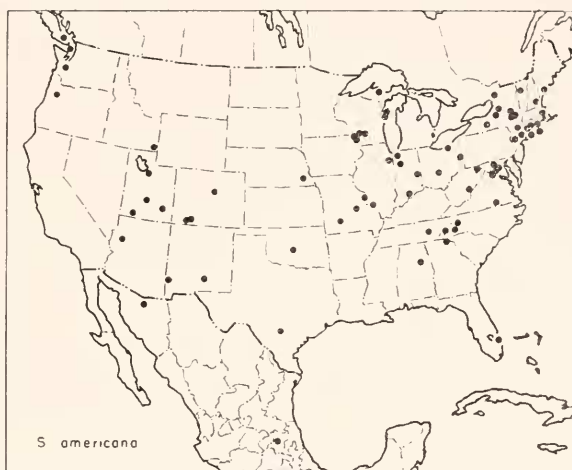
- Asagena americana* Emerton, 1882, Trans. Connecticut Acad. Sci., vol. 6, p. 23, pl. 4, fig. 6, ♂. Keyserling, 1886, Die Spinnen Amerikas, vol. 2, pt. 2, p. 2 pl. 11, fig. 135, ♂. Marx, 1889, Proc. U.S. Natl. Museum, vol. 12, p. 525. Simon, 1894, Histoire naturelle des Araignées vol. 1, p. 574, fig. 586. Banks, 1895, Jour. New York Ent. Soc., vol. 3, p. 84; 1895, Ent. News, vol. 6, p. 205. Emerton, 1902, The common spiders, p. 122, fig. 287, ♀. Banks, 1904, Proc. Acad. Nat. Sci. Philadelphia, vol. 56, p. 653; 1907, Indiana Dept. Geol. Nat. Resources, 31st Rept., p. 739; 1908, Proc. Ent. Soc. Washington, vol. 9, p. 5; 1910, Bull. U.S. Natl. Mus., no. 72, p. 22; 1911, Proc. Acad. Nat. Sci. Philadelphia, vol. 63, p. 445. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 170. Comstock, 1912, The spider book, p. 364, fig. 369, ♀. Emerton, 1913, Appalachia, vol. 12, p. 155. Barrows, 1918, Ohio Jour. Sci., vol. 18, p. 302. Emerton, 1920, Trans. Roy. Canadian Inst., vol. 12, p. 312. Bishop, 1925, Bull. New York State Mus., no. 260, p. 66, fig. 1, ♂. Bishop and Crosby, 1926, Jour. Elisha Mitchell Sci. Soc., vol. 41, p. 176. Crosby and Bishop, 1928, Mem. Cornell Agr. Exp. Sta., no. 101, p. 1039. Chamberlin, 1928, Proc. Biol. Soc. Washington, vol. 41, p. 179. Worley and Pickwell, 1931, Univ. Nebraska Studies, vol. 27, p. 25. Worley, 1932, Publ. Univ. Washington Biology, vol. 1, p. 23. Banks, Newport and Bird, 1932, Publ. Univ. Oklahoma, Biol. Surv., vol. 4, no. 1, p. 21. Chickering, 1934, Papers Michigan Acad. Sci., vol. 19, p. 578. Fox, 1940, Proc. Biol. Soc. Washington, vol. 53 p. 40. Comstock, 1940, The spider book, rev. ed., p. 379, fig. 369, ♀. Chamberlin and Ivie, 1944, Bull. Univ. Utah, biol. ser., vol. 8, no. 5, p. 37. Muma, 1945, Bull. Univ. Maryland Agr. Exp. Sta., no. A38, p. 24. Muma and Jeffers, 1945, Ann. Ent. Soc. America, vol. 38, p. 248. Archer, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 22. Levi and Field, 1954, Amer. Midland Nat., vol. 51, p. 442. Kaston, 1955, Trans. Illinois Acad. Sci., vol. 47, p. 166. Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 73, figs. 25-29, ♀, ♂. Kaston, 1953, How to know the spiders, p. 163, fig. 406, ♀. Elliott, 1953, Proc. Indiana Acad. Sci., vol. 62, p. 308. Bonnet, 1955, Bibliographia Araneorum, vol. 2, p. 753.

Asagena dubia, Roewer, 1942, Katalog der Araneae, vol. 1, p. 397. Probably not *Herpyllus dubia* Hentz.

Types. Male holotype from garden fence in Boston, Mass., May 30, in the Museum of Comparative Zoology.

Description. Carapace, sternum brown; legs yellow-brown. Abdomen black, often with a pair of white spots on posterior

portion of dorsum. Anterior median eyes sometimes slightly smaller than others, almost their diameter apart, three-quarters diameter from laterals. Posterior eyes one diameter apart, one diameter from laterals. Tooth on anterior margin of male chelicerae indistinct. Males with femora swollen, often with ventral spines on first femora and tibia, but these may be absent. Usually with a thorn on distal end of second femur. Epigynum illustrated by Figure 67, male palpus by Figure 68. Total length of females 3.5-4.7 mm. A female from Wisconsin measured: total length, 4.0 mm. Carapace 1.6 mm. long, 1.3 mm. wide.



Map 12. Distribution of *Steatoda americana* (Emerton).

First patella and tibia, 1.5 mm.; second, 1.2 mm.; third 1.0 mm. Fourth femur, 1.2 mm.; patella and tibia, 1.6 mm.; metatarsus, 0.7 mm.; tarsus, 0.6 mm. Total length of males, 3.2-4.4 mm. A male from Wisconsin measured: total length, 4.4 mm. Carapace 2.2 mm. long, 1.6 mm. wide. First patella and tibia, 1.7 mm.; second, 1.2 mm.; third, 1.4 mm. Fourth femur, 1.5 mm.; patella and tibia, 1.7 mm.; metatarsus, 1.2 mm.; tarsus, 0.7 mm.

Natural History. This species is found in leaf litter, under stones, under loose bark of logs and in moss; it has also been found in Wisconsin sweeping grass and vegetation in woods. It has been found with three spherical, transparent, egg sacs, 4-5

mm. in diameter, containing 22-33 light yellow eggs (Kaston, 1948). Muma and Jeffers (1945) have found it in nests of the wasp *Sceliphron*. It has also been reported from other wasp nest collections.

Distribution. United States and southern Canada, except California and Oregon, south to Hidalgo.

Records. *Ontario:* Rockport. *British Columbia:* (Emerton, 1920). *Maine:* Cumberland Co. *New Hampshire:* (Emerton, 1913). *Vermont:* Chittenden Co. *Rhode Island:* (Fox, 1940). *Connecticut:* (Kaston, 1948). *New York:* (Crosby and Bishop, 1928); Bronx; Onondaga Co.; Suffolk Co. *New Jersey:* Bergen Co. *Maryland:* (Muma, 1945). *District of Columbia:* Washington. *Virginia:* Fairfax Co. *West Virginia:* (Bishop and Crosby, 1924); Pocahontas Co. *North Carolina:* (Banks, 1911; Bishop and Crosby, 1926); Swain Co. *Georgia:* (Chamberlin and Ivie, 1944). *Florida:* (Banks, 1904). *Alabama:* (Archer, 1946). *Ohio:* (Barrows, 1918); Columbiana Co.; Cuyahoga Co. *Michigan:* (Chickering, 1934). *Indiana:* (Elliott, 1953); Porter Co. *Tennessee:* Roane Co. *Wisconsin:* (Levi and Field, 1954); Crawford Co.; Door Co.; Grant Co.; Richland Co.; Vernon Co. *Illinois:* (Kaston, 1955); Randolph Co. *Missouri:* (Banks, 1895); Crawford Co.; St. Louis. *Nebraska:* (Worley and Pickwell, 1931). *Oklahoma:* Cleveland Co. *Texas:* San Antonio. *Colorado:* Archuleta Co.; Denver. *New Mexico:* Catron Co.; Otero Co. (9-12000 ft.). *Idaho:* Bear Lk. Co. *Utah:* (Chamberlin, 1928); Salt Lake City; Zion Natl. Pk. *Arizona:* Mohave Co. *Washington:* (Worley, 1932). *Oregon:* Salem. *Sonora:* 27 mi. S. of Nogales. *Hidalgo:* S. of Jacala, July 20, 1956 (V. Roth, W. J. Gertsch).

STEATODA SEPTEMMACULATA (Keyserling), new combination

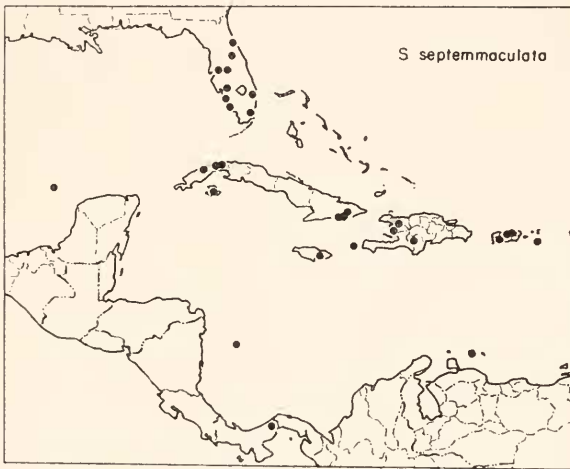
Figures 70-73; Map 13.

Lithyphantes septemmaculatus Keyserling, 1884, Die Spinnen Amerikas, vol. 2, no. 1, p. 141, pl. 6, fig. 88, ♀. van Hasselt, 1887, Tijdschr. Ent., vol. 30, p. 234. Marx, 1889 Proc. U.S. Natl. Mus., vol. 12, p. 522. Banks, 1904, Proc. Acad. Nat. Sci. Philadelphia, vol. 56, p. 653; 1910, Bull. U.S. Natl. Mus. no. 72, p. 21. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 183; 1930, Trans. Connecticut Acad. Sci., vol. 30, p. 169, figs. 6, 7, ♀. Bryant, 1940, Bull. Mus. Comp. Zool., vol.

86, p. 304. Roewer, 1942, Katalog der Araneae, vol. 1, p. 408. Bryant, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 337; 1945, Trans. Connecticut Acad. Sci., vol. 36, p. 204, pl. 1, fig. 7, 9, ♂; 1948, Bull. Mus. Comp. Zool., vol. 100, p. 375. ? Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 79.

Types. Syntypes from "Denver in Columbia" collected by Marx, and also from Enterprise, Florida, in the United States National Museum. Marx's labels are commonly wrong and the Denver locality is undoubtedly an error.

Description. Carapace, sternum, legs orange. Femora dusky. Abdomen purple-black with seven white spots on dorsum (Fig. 70), two of them above spinnerets. Eyes subequal in size. An-



Map 13. Distribution of *Steatoda septemmaculata* (Keyserling).

terior median eyes one diameter apart, less than one diameter from laterals. Posterior medians one diameter apart, one and one-half diameters from laterals. Laterals slightly separated from each other. Chelicerae and maxillae of male modified; the former lacking teeth. Epigynum illustrated by Figure 72, male palpus by Figure 73. Total length of females 2.5-3.2 mm. A female from Florida measured total length 2.5 mm. Carapace 1.10 mm. long, 0.88 mm. wide. First patella and tibia, 1.00 mm.; second, 0.89 mm.; third, 0.75 mm. Fourth femur, 1.04 mm.;

patella and tibia, 1.18 mm.; metatarsus, 0.62 mm.; tarsus, 0.47 mm. Total length of males 1.8-3.4 mm. A male from Florida measured total length, 3.0 mm. Carapace 1.78 mm. long, 1.11 mm. wide. First patella and tibia, 1.26 mm.; second 1.15 mm.; third, 0.98 mm. Fourth femur, 1.28 mm.; patella and tibia, 1.35 mm.; metatarsus, 0.84 mm.; tarsus, 0.60 mm.

Natural History Petrunkevitch (1930) found this species on the undersides of old coconut shells and in cactus fields in Puerto Rico.

Distribution. Florida, Panama, West Indies. (Map 13.) Kaston (1948) reported a female found in Litchfield, Connecticut. This has presumably been imported, or it is an erroneous record. The specimen could not be found.

Records. *Florida:* (Banks, 1904; Bryant, 1945) Collier Co.; De Soto Co.; Hillsborough Co.; Orange Co.; Polk Co. *Yucatan:* Cayo Arenas. *Panama:* Santa Rosa (Colón); Ensenada. *Isla de Providencia.* *Cuba:* (Bryant, 1940); Habana; Cabañas; Daiquiri; Pinar del Río; Marianao. *Jamaica:* Western Kingston. *Navassa Isl. Hispaniola:* (Bryant, 1948). *Puerto Rico:* (Petrunkevitch, 1930). *Virgin Islands:* (Bryant, 1942). *Lesser Antilles:* (van Hasselt, 1887).

STEATODA GROSSA (C.L. Koch)

Figures 74, 83-85; Map 14.

Theridion grossum C.L. Koch, 1838, Die Arachniden, vol. 4, p. 112, fig. 321, ♀.

Scatoda grossa, C.L. Koch, 1851. Übersicht des Arachnidensystems, pt. 5, p. 17.

Theiridion nitidum Holmberg, 1876, An. Agr. Argentina, vol. 4, p. 72.

Theridion domesticum Holmberg, 1876, *op. cit.*

Scatoda pusulosa Keyserling, 1877, Verhandl. zool. bot. Gesell. Wien., vol. 27, p. 579, pl. 14, fig. 7, 8, ♀, ♂.

Lithyphantes grossa, Pavesi, 1878, Ann. Mus. Civ. Genova, vol. 11, p. 371.

Teutana grossa, Simon, 1881, Les Arachnides de France, vol. 5, p. 164.

Banks, 1898, Proc. California Acad. Sci., 3rd ser., vol. 1, p. 238, F.O.P. Cambridge, 1902, Biologia Centrali Americana, Araneidea, vol. 2, p. 374, pl. 35, fig. 9, 10, ♀, ♂. Banks, 1909, Proc. Acad. Nat. Sci. Philadelphia, vol. 61, p. 205. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 189. Emerton, 1911, Trans. Connecticut Acad. Sci., vol. 16, p. 387, fig. 2, ♂. Chamberlin, 1919, Jour. Ent. Zool., vol. 12,

p. 25. Reimoser, 1939, Ann. Naturhist. Mus. Wien, vol. 50, p. 344. Fox, 1940, Proc. Biol. Soc. Washington, vol. 53, p. 42. Chamberlin and Ivie, 1941, Bull. Univ. Utah, biol. ser., vol. 6, no. 3, p. 12. Roewer, 1942, Katalog der Araneae, vol. 1, p. 414. Branch, 1942, Bull. South. California Acad. Sci., vol. 41, p. 138. Archer, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 21. Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 86, figs. 60-62, ♀, ♂. Schenkel, 1950, Verhandl. Naturf. Gesell. Basel, vol. 61, p. 52.

Teutana nitida, Keyserling, 1882, Die Spinnen Amerikas, vol. 2, pt. 1, p. 124, pl. 6, fig. 79, ♀, ♂.

Teutana zonata Keyserling, 1882, *op. cit.*, p. 127, pl. 6, fig. 80, ♂. Banks, 1898, Proc. California Acad. Sci., 3rd ser. vol. 1, p. 238. O.P. Cambridge, 1902, Biologia Centrali Americana, Araneidea, vol. 1, p. 306, pl. 35, fig. 7, 8, ♀, ♂. NEW SYNONYMY.

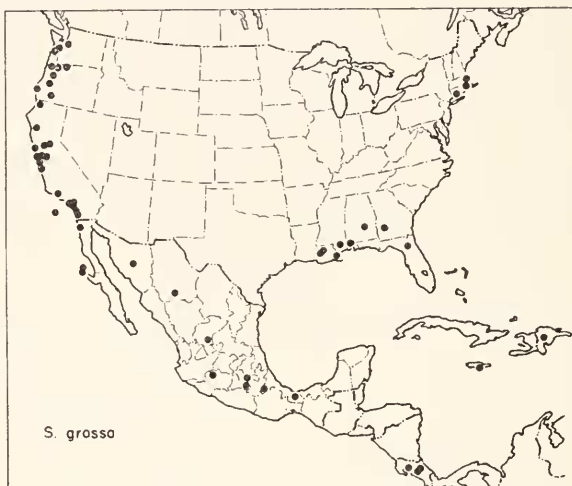
Asagena zonata, F.O.P., Cambridge, 1902, *ibid*, vol. 2, p. 378. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 171. Roewer, 1942, Katalog der Araneae, vol. 1, p. 397, Bonnet, 1955, Bibliographia Araneorum, vol. 2, p. 757. NEW SYNONYMY.

Teutana modesta Bryant, 1948, Bull. Mus. Comp. Zool., vol. 100, p. 375, figs. 49, 51, ♀. NEW SYNONYMY.

Types. The types of *Theridion grossum* from Peloponnesus peninsula and Germany. The types of *Theridion nitidum* and *Theridion domesticum* Holmberg from Argentina are lost. The types of *Steatoda pusulosa* Keyserling from Uruguay. Male type of *Teutana zonata* Keyserling from Mexico in the Muséum National Histoire Naturelle in Paris. Female holotype of *Teutana modesta* Bryant from the Cordillera Central, Valle Nuevo, 7000 ft., Dominican Republic in the Museum of Comparative Zoology.

Description. Carapace, sternum, legs dark orange. Abdomen purple-black, with an indistinct light line around anterior margin and several indistinct light patches on dorsum or with pattern as in *S. triangulosa*. Eyes subequal in size. Anterior eyes separated by one-third their diameter. Posterior medians separated by one-half their diameter, by one diameter from laterals. Chelicerae of males swollen, with a short thick fang. Epigynum variable, sometimes with a wide septum (Fig. 84) sometimes with septum almost missing (Fig. 85). Male palpus illustrated by Figure 74. Total length of females 5.9-10.5 mm. A female from California measured: total length, 8.6 mm. Carapace 3.2 mm. long, 2.7 mm. wide. First femur, 4.5 mm.; patella and tibia.

5.6 mm.; metatarsus, 4.3 mm.; tarsus, 1.9 mm. Second patella and tibia, 4.0 mm.; third, 3.2 mm., fourth, 4.5 mm. Total length of males 4.1-7.2 mm. A male from California measured: total length, 6.5 mm. Carapace 3.1 mm. long, 2.3 mm. wide. First femur, 4.7 mm.; patella and tibia, 5.5 mm.; metatarsus, 4.6 mm.; tarsus, 1.8 mm. Second patella and tibia, 4.1 mm.; third, 3.2 mm.; fourth, 4.7 mm.



Map 14. North and Central American distribution of *Steatoda grossa* (C.L. Koch).

Natural History. Branch (1942) raised *S. grossa* in the laboratory, feeding it on *Drosophila* and house flies. This species seems to be common in cities in North America. Archer (1946) reports that it lives in brick piles and under loose bricks and that it preys on *Latrodectus mactans* (Fabricius), the black-widow spider.

Distribution. Cosmopolitan. In the United States, along the coasts only (Map 14). The proximity of this species to man would suggest that it has been introduced recently into North America.

Records. *Massachusetts:* (Emerton, 1911). *Rhode Island:* Providence. *Connecticut:* (Kaston, 1948). *Georgia:* Daugherty

Co. *Florida*: Alachua Co. *Alabama*: Mobile; (Archer, 1946). *Mississippi*: Forrest Co. *Louisiana*: East Baton Rouge Par.; Orleans Par.; West Baton Rouge Par. *Washington*: Olympia; Pacific Co.; Seattle. *Oregon*: Corvallis; Curry Co.; Jackson Co.; Eugene; Hood River Co.; Portland; Tillamook Co. *California*: (Chamberlin and Ivie, 1944; Schenkel, 1950); Alameda Co.; Del Norte Co.; Los Angeles Co.; Marin Co.; Monterey Co.; Mendocino Co.; Sacramento, San Diego Co.; San Francisco; San Nicolas Isl.; Santa Barbara; Yolo Co. *Chihuahua*: Santa Barbara. *Baja California*: Isl. Cedros; Isl. Natividad. *Sonora*: (Banks, 1898). *Zacatecas*: 10 mi. E. of Zacatecas. *Puebla*: Tehuacán. *Distrito Federal*: San Gerónimo; San Angel; Coayacan; Mexico (in house). *Morelos*: Cuernavaca. *Michoacan*: Zamora. *Veracruz*: Los Naranjos. *Costa Rica*: (Banks, 1909; Reimoser, 1939). *Jamaica*: St. Andrew Par. *Peru*: Arequiba; Acomayo (Huanuco); Tingo María; Lima. *Brazil*: Minas Gerais; Min. Serinha Diamantina. *Argentina*: (Keyserling, 1886); Salta.

STEATODA TRIANGULOSA (Walckenaer)

Figures 75, 76, 80-82; Map 15.

- Aranca triangulosa* Walckenaer, 1892, Faune Parisienne, vol. 2, p. 207.
Theridion triangulifer, Walckenaer, 1895, Tableau des Aranéides, p. 75, pl. 8, fig. 73, 74.
Theridion serpentinum Hentz, 1850, Jour. Boston Soc. Nat. Hist., vol. 6, p. 273, pl. 9, fig. 2; 1875, The spiders of the United States, p. 144, pl. 16, fig. 2.
Scatoda triangulifera, Simon, 1873, Mem. Soc. Roy. Sci. Liège, vol. 5, p. 116.
Steatoda triangulosa, Thorell, 1873, Remarks on synonyms of European spiders, p. 505. Emerton, 1882, Trans. Connecticut Acad. Sci., vol. 6, p. 22, fig. 6, ♂. Banks, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 31. Emerton, 1902, The common spiders, p. 121, fig. 286, ♀.
Teutana triangulosa, Simon, 1881, Les Arachnides de France, vol. 5, p. 163. Keyserling, 1884, Die Spinnen Amerikas, vol. 2, pt. 1, p. 122, pl. 6, fig. 78, ♀, ♂. Marx, 1889, Proc. U.S. Natl. Mus., vol. 12, p. 521. Banks, 1895, Ent. News, vol. 6, p. 205; 1896, Jour. New York Ent. Soc., vol. 4, p. 191; 1899, Proc. Ent. Soc. Washington, vol. 4, p. 189; 1900, Proc. Acad. Nat. Sci. Philadelphia, p. 533. Montgomery, 1903, *ibid.*, p. 112. Scheffer, 1905, Trans. Kansas Acad. Sci., vol. 19, p. 192. Bryant,

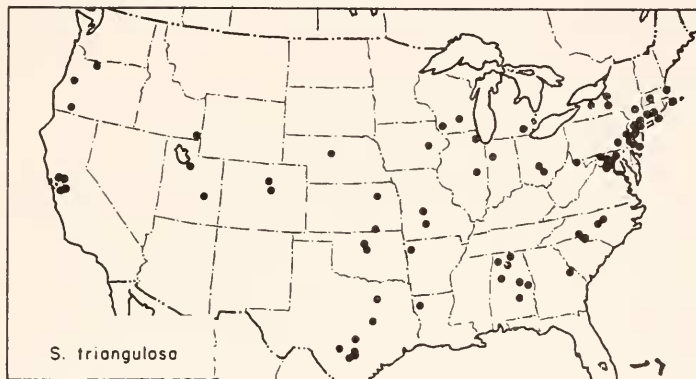
- 1908, Occas. Papers Boston Soc. Nat. Hist., vol. 7, p. 17. Banks, 1910, Bull. U.S. Natl. Mus., no. 72, p. 21; 1911, Proc. Acad. Nat. Sci. Philadelphia, vol. 63, p. 445. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 190. Comstock, 1912, The spider book, p. 361, figs. 364, 365, ♀. Barrows, 1918, Ohio Jour. Sci., vol. 18, p. 304. Bishop and Crosby, 1926, Jour. Elisha Mitchell Sci. Soc., vol. 41, p. 181. Crosby and Bishop, 1928, Mem. Cornell Agr. Exp. Sta., no. 101, p. 1041. Worley and Pickwell, 1931, Univ. Nebraska Studies, vol. 27, p. 29. Banks, Newport and Bird, 1932, Publ. Univ. Oklahoma, Biol. Surv., vol. 4, no. 1, p. 22. Wiehle, 1937, in Dahl, Die Tierwelt Deutschlands, pt. 33, p. 198, figs. 217-221, ♀, ♂. Stiles and Detwiler, 1938, Proc. Iowa Acad. Sci., vol. 45, p. 286. Comstock, 1940, The spider book, rev. ed., p. 376, figs. 364-365, ♀. Fox, 1940, Proc. Biol. Soc. Washington, vol. 53, p. 42. Roewer, 1942, Katalog der Araneae, vol. 1 p. 416. Chamberlin and Ivie, 1944, Bull. Univ. Utah, biol. ser., vol. 8, no. 5, p. 46. Muma, 1945, Bull. Univ. Maryland Agr. Exp. Sta., no. A38, p. 27. Archer, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 21. Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 86, figs. 57-59, ♀, ♂. Kaston, 1953, How to know the spiders, p. 165, fig. 413, ♀. Elliott, 1953, Proc. Indiana Acad. Sci., vol. 62, p. 309. Levi and Field, 1954, Amer. Midland Nat., vol. 51, p. 444. Kaston, 1955, Trans. Illinois Acad. Sci., vol. 47, p. 166.
- Theridion saylora* Fox, 1940, Proc. Biol. Soc. Washington, vol. 53, p. 43, fig. 1, ♀.

Types. Types of *Aranea triangulosa* from Paris, France. Type of *Theridion serpentinum* from Georgia is lost. Type of *Theridion saylora* from Ozark Lake, Missouri in the United States National Museum.

Description. Carapace, sternum orange-yellow; legs yellow. Abdomen purplish brown with white spots on dorsum (Fig. 82) and towards sides. Eyes subequal or anterior medians smaller. Anterior median eyes separated by two-thirds their diameter, by one-third to two-thirds from laterals. Posterior medians two-thirds to one diameter apart, one diameter from laterals. Epigynum illustrated by Figure 81, male palpus by Figure 76. Total length of females, 3.6-5.9 mm. A female from Massachusetts measured: total length, 5.1 mm. Carapace 1.9 mm. long, 1.8 mm. wide. First femur, 3.0 mm.; patella and tibia, 3.8 mm.; metatarsus, 2.6 mm.; tarsus, 1.3 mm. Second patella and tibia, 2.4 mm.; third, 1.6 mm.; fourth, 2.7 mm. Total length of males 3.5-4.7 mm. A male from Massachusetts measured: total length, 4.7 mm. Carapace 2.3 mm. long, 1.8 mm. wide. First femur

3.2 mm.; patella and tibia, 3.7 mm.; metatarsus, 2.4 mm.; tarsus, 2.0 mm. Second patella and tibia, 2.5 mm.; third, 2.0 mm.; fourth, 2.7 mm.

Natural History. This species is locally common in and on houses. In museums it may infest dermestid beetle cultures. Wiehle (1937) reports that it lives in houses in the northern part of its range in Europe, under stones and on walls in the southern part of the range. This agrees with Archer's (1946) observations in the southern United States. Montgomery (1903) observed mating of this species.



Map 15. North American distribution of *Steatoda triangulosa* (Walekenaer).

Distribution. Central and southern Europe, southern Russia, Mediterranean, St. Helena (Wiehle, 1937). United States. Map 15. South America. The city dwelling habit would suggest that this species has been introduced to North America recently.

Records. *Massachusetts:* (Bryant, 1908); Bristol Co.; Springfield. *Connecticut:* (Kaston, 1948). *New York:* (Banks, 1896; Crosby and Bishop, 1928) Rochester; Bronx; Manhattan; Brooklyn. *New Jersey:* (Fox, 1940); Bergen Co.; Camden Co.; Mercer Co. *Pennsylvania:* Lancaster; Northampton Co.; Philadelphia. *Maryland:* (Keyserling, 1884; Muma, 1945). *District of Columbia:* (Fox, 1940). *Virginia:* Fairfax Co. *West Virginia:* Monongahela Co. *North Carolina:* (Banks, 1911; Fox, 1940); Mecklenburg Co.; Union Co. *South Carolina:* *Georgia:* (Hentz,

1850; Chamberlin and Ivie, 1944). *Alabama*: (Archer, 1946); Colbert Co.; Tallapoosa Co. *Louisiana*: (Banks, 1899). *Ohio*: (Hentz, 1875; Barrows, 1918). *Michigan*: Washtenaw Co. *Indiana*: (Elliott, 1953). *Wisconsin*: (Levi and Field, 1954). *Illinois*: Cook Co.; Urbana. *Iowa*: (Stiles et al. 1938). *Missouri*: (Banks, 1895). *Arkansas*: Washington Co. *Nebraska*: (Worley and Pickwell, 1931). *Kansas*: (Scheffer, 1905); Cowley Co. *Oklahoma*: (Banks et al., 1932); Payne Co. *Texas*: Atascosa Co.; Austin; Dallas; Kerr Co.; McLennan Co.; San Antonio. *Colorado*: Boulder; Denver. *Idaho*: Bear Lake. *Utah*: Emery Co.; Salt Lake City. *Oregon*: Jackson Co.; Lane Co.; Wasco Co. *California*: Alameda Co.; Solano Co.

STEATODA CASTANEA (Clerck)

Figures 77-79

Araneus castaneus Clerck, 1757, *Aranei Suecici*, p. 49, pl. 3, fig. 3.

Teutana castanea, Wiehle, 1937, in Dahl, *Die Tierwelt Deutschlands*, pt. 33, p. 195, figs. 205-211, ♀, ♂. Roewer 1942, *Katalog der Araneae*, vol. 1, p. 415.

One female has been collected at St. Thomas, Ontario, probably in a greenhouse. It has not become established in this region.

Distribution. Europe. Turkestan (Wiehle, 1937).

STEATODA BIPUNCTATA group

The group is represented by a series of closely related species with the eastern *Steatoda borealis* at one extreme, the European *S. bipunctata* at the other. In North America they present a series of mostly allopatric forms, each slightly different from the preceding. The last two of these species (*grandis*, *americana*) overlap one of the preceding (*hespera*). Furthermore, these last two are sympatric over part of their range. An attempt was made to cross one female *S. hespera* with males of *S. borealis* in the laboratory. No egg sac was produced. This, however, should be repeated.

Description. The coloration, size, proportions of all species are about the same. The carapace is yellow to red-brown, sternum and legs brown, coxae lighter brown. Dorsum of abdomen

dark brown to purplish black with a median white line and an anterior marginal line which continues on sides (Fig. 91). Venter light with two dark marks, or rarely all yellow or all dark (Fig. 90). Short spines covering thorax, more distinct in male. Carapace of males more rugose. Anterior median eyes larger (about 1.3 diameter) than others. Anterior medians two-thirds diameter apart, less than one-fourth diameter from laterals. Posterior medians separated by about one diameter, slightly closer to laterals. Laterals slightly separated from each other in many species. Epigynum similar in all species. Internal genitalia heavily sclerotized, not very useful in differentiating species. Male palpus with large radix (R in Figs. 153-154). A female *Steatoda borealis* from Wisconsin measured: total length, 4.8 mm. Carapace 1.8 mm. long, 1.6 mm. wide. First femur, 2.2 mm.; patella and tibia, 2.6 mm.; metatarsus, 1.6 mm.; tarsus, 1.0 mm. Second patella and tibia, 1.8 mm.; third, 1.4 mm.; fourth, 2.2 mm. A male from Wisconsin measured: total length, 4.5 mm. Carapace 2.0 mm. long, 1.6 mm. wide. First femur, 2.3 mm.; patella and tibia, 2.9 mm.; metatarsus, 1.9 mm.; tarsus, 1.1 mm. Second patella and tibia, 2.0 mm.; third, 1.6 mm.; fourth, 2.2 mm.

Variation. Three species are polymorphic (*S. atascadera*, *S. mexicana*, *S. grandis*). The genitalia of *S. atascadera* seem more variable in that part of its range where no other species of the *S. bipunctata* group are found, than in the northern part of its range where *S. hespera* is also found. The male palpi of *S. grandis* are quite uniform in structure, but the epigyna are extremely variable. Both the palpi and epigyna of *S. mexicana* are variable. Where collected together, *S. grandis* and *S. mexicana* always are quite distinct; however females from many localities may be difficult to place. It is assumed that in these latter localities only one or the other species occurs.

The question may be raised here whether *S. borealis* and *S. hespera* are two species or subspecies. There is no overlap in the two groups and the distribution would indicate that only one species is involved. However males and females of the two species in the Rocky Mountain region are always easy to place in one species or another, while some female *S. hespera* from the West Coast appear much more like *S. borealis*. In other words the species seem more distinct along the common border

of their range than in other parts of it, which would indicate that we are dealing with two species.

Natural History. The species of *Steatoda* live under bark, in crevices of rocks, sometimes under stones. They are common in buildings where they build small webs in corners; however, during daytime the spiders stay hidden in crevices, coming out to the web in the evening. Females and males may inhabit the same web. In captivity slight vibration of flies in the web, or sometimes only the presence of a dead fly in the web, brought the spiders out of their retreats. Kaston (1948) described the egg sac of *S. borealis* as being "loosely woven, so that the ivory to pale pink eggs show through the brownish white threads. The shape is approximately spherical 5-6.5 mm. in diameter and I counted in four egg sacs, 37, 47, 76, and 95 eggs respectively."

Distribution. This group may be mainly holarctic in distribution. The male *Steatoda brasiliiana* Keyserling from Brazil may be an introduced form.

Key to females of the STEATODA BIPUNCTATA group

Note that figures were drawn with the epigynum lying flat, thus from a slightly anterior position of the abdomen.

1. Raised anterior median lobe of epigynum wider than long (Fig. 113)2
1. Raised anterior median lobe as long as wide, or longer than wide (Fig. 93, 105, 109)4
2. Anterior arms of depression pointing straight anterior (Figs. 107-109), California coast range (Map 17)*atascadera*
2. Arms of depression pointing slightly to sides (Figs. 111, 113, 115) ...3
3. Posterior portion of depression swollen and wider than arms (Figs. 117, 118). East of Rocky Mountains to Alaska (Map 19) ...*borealis*
3. Posterior portion of depression as wide as arms (Figs. 111, 113, 115) Western United States to southern British Columbia (Map 19)
.....*hespera*
4. Raised anterior median lobe as wide as long (Figs. 107, 109). California coast range (Map 17) *atascadera*
4. Raised anterior median lobe longer than wide5
5. Found in southern California (Map 17)*palomara*
5. Not found in southern California6
6. With a large swollen posterior lip and swollen areas on each side of depression (Fig. 89)*bipunctata*
6. Lacking swollen areas on each side of depression7

7. Openings in a deep depression on sides of a very narrow septum (Figs. 93-97). Depression often with material difficult or impossible to remove. Western United States (Map 17) *grandis*
7. Openings in a shallower depression, septum wider (Figs. 99-103). Material in depression easily removed. Western United States and Mexico (Map 18) *mexicana*

Key to males of the STEATODA BIPUNCTATA group

Note that figures of the palpus in mesal view were drawn with the radix lying flat, thus from a slightly anterior view.

1. Radix with a well-developed median lobe (Figs. 148, 153). East of Rocky Mountains to Alaska (Map 19) *borealis*
1. Radix lacking median lobe (Figs. 119, 129, 142, 155) 2
2. Radix enclosing an area, the diameter of which is less, equal or only slightly more than the greatest width of radix (Figs. 119, 155) ... 3
2. Radix enclosing an area, the diameter of which is much greater than the width of the radix (Figs. 129, 145) 4
3. Embolus short and thick (Fig. 156) *bipunctata*
3. Embolus long and thin (Fig. 123). Western United States (Map 17) *grandis*
4. Radix with a distinct ectal lobe below tip (Figs. 130-132, 135, 137, 139, 141) 5
4. Radix with no lobe near tip 6
5. California coast range south to Riverside County (Map 17) *atascadera*
5. Southern California (Map 17) *palomara*
6. Radix with tip pointing ectally, above a notch, (Figs. 130-132) Southern California (Map 17) *palomara*
6. End of radix pointing ectal but without notch below (Figs. 125, 146) 7
7. Base of embolus almost circular with rim curved outward (Figs. 144, 147) Western United States, southern British Columbia (Map 19) *hespera*
7. Base of embolus oval with rim not curved outward (Fig. 128) Western United States and Mexico (Map 17) *mexicana*

STEATODA BIPUNCTATA (Linnaeus)

Figures 86-89, 155-156; Map 16.

- Aranea bipunctata* Linnaeus, 1758, Systema Naturae, 10th ed., p. 620.
- Aranea 4-punctata*, Fabricius, 1775, Systema Entomologiae, p. 434.
- Aranea punctata*, De Geer, 1778, Mémoires pour servir à l'histoire des Insectes, vol. 7, p. 255, pl. 15, fig. 1.
- Theridion 4-punctatum*, Walckenaer, 1805, Tableau des Aranéides, p. 73, pl. 7, figs. 69, 70.

Steatoda 4-punctatum, Sundevall, 1833, *Conspectus Arachnidum*, p. 17.

Phrurolithus ornatus C.L. Koch, 1839, *Die Arachniden*, vol. 6, p. 114, fig. 515.

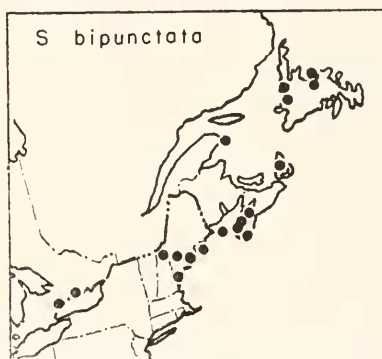
Eucharia bipunctata, C.L. Koch, 1845, *ibid.*, vol. 12, p. 99, fig. 1027.

Theridium cruciatum Giebel, 1869, *Zeitschr. Ges. Naturwiss.*, vol. 34, p. 303.

Steatoda bipunctata, Thorell, 1856, *Nova Acta reg. Soc. sci. Upsaliensis*, ser. 3, vol. 2, p. 140. Keyserling, 1884, *Die Spinnen Amerikas*, vol. 2, pt. 1, p. 116, pl. 6, fig. 76, ♀, ♂. Petrunkevitch, 1911, *Bull. Amer. Mus. Nat. Hist.*, vol. 29, p. 187. Wiehle, 1937, in Dahl, *Die Tierwelt Deutschlands*, pt. 33, p. 193, figs. 200-204, ♀, ♂. Kurata, 1939, *Canadian Ent.*, vol. 53, p. 81. Roewer, 1942, *Katalog der Araneae*, vol. 1, p. 412. Gertsch, 1946, in Procter, *Biological Survey of the Mount Desert Region*, pt. 7; Gertsch, 1949, *American spiders*, p. 258. Locket and Millidge, 1953, *British spiders*, vol. 2, p. 56, figs. 38, ♀, ♂. Hackman, 1954, *Acta Zool. Fennica*, vol. 79, p. 4.

Types. The type locality is presumably Sweden.

Diagnosis. This species may have the legs very slightly shorter



Map 16. American distribution of *Steatoda bipunctata* (Linnaeus).

than in other species of *Steatoda*. It is readily distinguished by comparison of the genitalia (Figs. 89, 155, 156). The total length of females is 4.8-7.3 mm., of males, 4.4-6.0 mm.

Natural History. This species may have been introduced in recent times. It seems to have survived mainly along the coast or the shores of Lake Ontario. C. Dondale has collected specimens on a barn.

Distribution. Europe, Siberia, Kamchatka (Wiehle, 1937). Introduced in French Guiana and Venezuela (Keyserling, 1884).

Probably introduced on the coast of Maine to Newfoundland, north shore of Lake Ontario (Map 16).

Records. Newfoundland: (Hackman, 1954); Nicholsville. *Nova Scotia:* Weymouth; Grand Pré; Baddeck; Barrington; Lequille. *New Brunswick:* Grand Manan Isl. *Quebec:* Bonaventura Isl. *Ontario:* Toronto (W. J. Gertsch); Lakeport. *Maine:* Cumberland Co.: Sebago Lake; Hancock Co.: Mt. Desert Isl.; Lincoln Co.: Jefferson; York Co.: Saco. *New Hampshire:* Coos Co.: Gorham, 1946, (E. L. Bell).

STEATODA GRANDIS Banks

Figures 92-97, 119-123; Map 17.

Steatoda grandis Banks, 1901, Proc. Acad. Nat. Sci. Philadelphia, p. 578; 1910, Bull. U.S. Natl. Mus., no. 72, p. 21, Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 188. Roewer, 1942, Katalog der Araneae, vol. 1, p. 413.

Steatoda zionis Chamberlin and Ivie, 1935, Bull. Univ. Utah, biol. ser. vol. 2, no. 8, p. 12, figs. 36, 42, ♀, ♂. Roewer, 1942, Katalog der Araneae, vol. 1, p. 414. NEW SYNONYMY.

Steatoda merula L. Fox 1940, Proc. Biol. Soc. Washington, vol. 53, p. 41, fig. 3, ♀. NEW SYNONYMY.

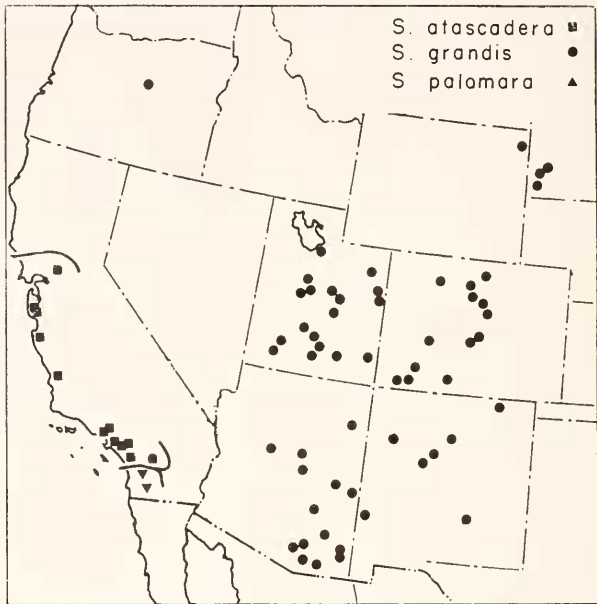
Types. Female type of *S. grandis* from Albuquerque, New Mexico, in the Museum of Comparative Zoology. Male holotype, female allotype of *S. zionis* from Zion National Park, Utah, in the American Museum of Natural History. Female type of *S. merula* from Mt. Lemmon, Arizona, in the United States National Museum (no. 1368).

Diagnosis and Variation. The epigyna of this species are extremely variable, particularly in the southern portion of its range (Figs. 93-97). The epigynum of the type of *S. grandis* resembles Figure 93. Only in the narrower septum and slightly deeper depression on each side of the epigynum does this species differ from *S. americana*; furthermore the depression of the epigynum is frequently filled with a material difficult or impossible to remove. The epigyna of the types of both *S. grandis* and *S. merula* are partly filled in this way. The palpus, in contrast to the female genitalia, shows little variation (Figs. 119, 120, 123). Only two males from central Colorado had the tip of the radix slightly different (Figs. 121, 122). Total length of females 4.9-9.0 mm.; that of males 4.3-7.4 mm.

Natural History. In Colorado this species has been collected under stones, rocks and in cliffs from lower elevations (7000-8000 ft.) than *S. hespera*.

Distribution. Western United States (Map 17).

Records. *South Dakota:* Custer Co.: Blue Bell, 4900 ft., ♀. *Pennington Co.:* Horsethief Lk., ♀; S. of Rapid City, ♀. *Wyoming:* Devil's Tower Natl. Mon., Aug. 5, 1952 (B. Malkin), ♀.



Map 17. Distribution of *Steatoda grandis* Banks, *S. palomara* Chamberlin and Ivie and *S. atascadera* Chamberlin and Ivie.

Colorado: Archuleta Co.: Piedra, ♀. Boulder, ♀. Denver, ♀. Douglas Co.: Parker, ♀. El Paso Co.: Cascade, ♀. Gunnison Co.: Taylor River, ♀. La Plata Co.: Durango, ♀. Larimer Co.: Estes Park, 7800 ft., ♂; Fort Collins, ♀. Mineral Co.: West Fork of Wolf Creek, 7800 ft., ♀. Rio Grande Co.: Monte Vista, ♀. Routt Co.: Steamboat Springs, ♀. Teller Co.: Pikes Peak, 10,000 ft., ♀. *New Mexico:* Colfax Co.: Raton, ♂. Bernalillo Co.: Sandia Mts., ♀. Catron Co.: 25 mi. N. of Alma, ♀.

Lincoln Co., ♀. Santa Fe Co.: 10 mi. S. of Santa Fe; Little Tesugue Canyon, ♂. Valencia Co.: Bluewater. *Utah*: Carbon Co.: Helper, ♀; Price, ♀, ♂. Iron Co.: Parowan, ♀, ♂. Emery Co.: Ferron, ♀, ♂. Garfield Co.: Escalante, ♂; Red Canyon, ♀, ♂. Millard Co.: Scipio, ♀. San Juan Co.: Monticello, ♀. Sevier Co.: Fish Lk., ♀; Richfield, ♀, ♂. Uintah Co.: Vernal, ♀; Watson, ♀; White Riv. nr. Evacuation Cr., 5000 ft., ♀. Utah Co.: Levan, ♀. Wayne Co.: Fruita, ♀; Notom, ♀, ♂. *Arizona*: Apache Co.: Wide Ruin, ♀, ♂; 17 mi. NE. of Whiteriver, ♀, ♂; Hannagan, ♀. Cochise Co.: Chiricahua Mts. (many collections) ♀, ♂; Carr Canyon, Huachuca Mts., ♀. Coconino Co.: Oak Cr. Canyon, ♀. Gila Co.: 7 mi. N. of Payson, ♀; Middle Pioneer Cr., Pinal Mts., ♀, ♂. Graham Co.: Graham Mt. (many collections) ♀, ♂. Pima Co.: Santa Catalina Mts. (many collections) ♀, ♂. Santa Cruz Co.: Santa Rita Mts. (many collections), ♀, ♂. Yavapai Co.: Prescott, ♀. *Oregon*: Wheeler Co.: Richmond, Fall 1948 (Donnelly), ♀; 3 Aug. 1951 (V. Roth), ♀, ♂.

STEATODA MEXICANA, new name

Figures 98-103, 124-128; Map 18.

Stearodea americana F.O.P. Cambridge, 1902, *Biologia Centrali-Americana*, Araneidea, vol. 2, p. 377, pl. 35, fig. 12, ♀. Not *Steatoda americana* (Emerton).

Steatoda americana, Petrunkevitch, 1911, *Bull. Amer. Mus. Nat. Hist.*, vol. 29, p. 187. Roewer, 1942, *Katalog der Araneae*, vol. 1, p. 413. Not *Steatoda americana* (Emerton). Not Banks, 1909, *Proc. Acad. Nat. Sci., Philadelphia*, vol. 61, p. 205.

Steatoda grandis, Chamberlin and Ivie, 1935, *Bull. Univ. Utah, biol. ser.*, vol. 2, no. 8, figs. 37, 40, 41, ♀, ♂. Not *S. grandis* Banks.

Types. Two female syntypes from Omiltemi, Guerrero in the British Museum (Natural History).

Diagnosis and Variation. The epigyna of this species are very variable particularly in the northern and eastern portion of its range (Figs. 99-103). The epigynum of a syntype examined resembles that from St. George, Utah (Fig. 99) but the scape is slightly wider. However, it is slightly narrower than that from Chiricahua Mountains (Fig. 103). Most females can readily be told from *S. grandis* by the wider scape of the epigy-

num. The shape of the radix of the palpus is variable. Some almost resemble that of *S. grandis*, in others the radix is long and stretched. The shape of the base of the embolus (Fig. 128) readily distinguishes this species from *S. hespera*. Total length of females 5.1-9.0 mm.; of males 4.8-5.7 mm.

Distribution. Idaho to Texas, Arizona south to Guerrero (Map 18).

Records. *Texas:* Big Bend Natl. Pk., Chisos Mts., ♀. Walker Co.: Huntsville, 2 Oct. 1950 (M. A. Cazier), ♀. *Colorado:* Larimer Co.: Red Feather Lakes, June 14, 1933 (A. B. Klots) ♀. *New Mexico:* Otero Co.: Camp Mary White, ♀, ♂. *Idaho:* Bear Lake Co.: Bloomington, ♀, ♂. *Utah:* Bryce Canyon Natl. Pk., ♀; Garfield Co.; 15 mi. N. of Boulder, ♀; Henry Mts., ♀; 10 mi. SE.



Map 18. Distribution of *Steatoda mexicana*, new name.

of Panguitch, ♀. Salt Lake City, ♀. Sevier Co.: Fish Lk., ♀. Utah Co.: Lehi, ♀; west shore of Utah Lk., ♀, ♂. Washington Co.: St. George, ♀; Beaver Dam Wash., ♀. *Arizona:* Cochise Co.: Rustler's Camp. Chiricahua Mts., ♀, ♂. Coconino Co.: Flagstaff, ♀. Grand Canyon Natl. Pk., ♀. Graham Co.: Graham Mt., Pinecrest, ♀, ♂. Santa Cruz Co.: 4 mi. SE. of Ruby, ♀.

Yavapai Co.: Prescott, ♀. *Chihuahua*: SW. of Santa Barbara. 8400 ft., ♀. *Durango*: "Providencia," 7700 ft., ♀.

STEATODA PALOMARA Chamberlin and Ivie

Figures 104, 105, 129-133; Map 17.

Steatoda palomara Chamberlin and Ivie, 1935, Bull. Univ. Utah, biol. ser., vol. 2, no. 8, p. 13, fig. 43, ♀. Roewer, 1942, Katalog der Araneae, vol. 1, p. 414.

Type. Female type from Mt. Palomar, California in the American Museum of Natural History.

Diagnosis. The epigynum (Fig. 105) and the tip of the radix of the palpus (Figs. 130-132) distinguish this species. Total length of females 5.0-6.8 mm.; males, 5.3 mm.

Distribution. Known only from San Diego County, California (Map 17).

Records. *California*: San Diego Co.: Mt. Palomar, July 25, 1931 (W. Ivie), ♀; July 13, 1953 (W. J. and J. W. Gertsch), ♀; 3000-5000 ft., June 30, 1956 (W. J. Gertsch and V. Roth), ♀, ♂; Descanso, June 25, 1947 (W. M. Pearce).

STEATODA ATASCADERA Chamberlin and Ivie

Figures 106-109, 134-141; Map 17.

Steatoda atascadera Chamberlin and Ivie, 1942, Bull. Univ. Utah, biol. ser., vol. 7, no. 1, p. 39, figs. 83, 84, ♀, ♂.

Types. Male holotype, female allotype from Atascadero Lake, San Luis Obispo County, California, from under concrete bridge at south end of lake, in the American Museum of Natural History.

Diagnosis and Variation. The epigyna (Figs. 107-109) and palpi (Figs. 134-141) of this species are extremely variable. Hardly two look alike. The tip of the radix of the male palp as well as the width of the anterior raised lobe of the epigynum separate this species from *S. palomara* and *S. hespera*. Total length of females 4.8-6.0 mm., of males, 3.8-4.4 mm.

Distribution. Coast range of California from Santa Cruz to Riverside County (Map 17).

Records. *California*: Los Angeles Co.: nr. Claremont; (V. Roth, W. J. Gertsch), ♀. San Gabriel Mts. (many records),

♀, ♂; Santa Monica Mts. (R. X. Schick), ♀. Glendale (E. I. Schlinger), ♀. Monterey Co.: Hastings Nat. Hist. Reserve (J. Linsdale), ♂. Orange Co.: Silverado Canyon, Santa Ana Mts. (R. X. Schick) ♀. Riverside Co.: San Jacinto Mts. (R. X. Schick), ♀. Santa Cruz Co.: Big Trees Park (A. F. Archer), ♂; Brookdale (W. H. Irvin), ♂. Yolo Co.: Davis (E. I. Schlinger), ♀.

STEATODA HESPERA Chamberlin and Ivie

Figures 90, 91, 110-115, 142-147; Map 19.

Steatoda hespera Chamberlin and Ivie, 1933, Bull. Univ. Utah, biol. ser., vol. 2, no. 2, p. 9, figs. 4-6, ♀, ♂. Gertsch, 1939, Amer. Mus. Novitates, no. 1032, p. 4. Chamberlin and Ivie, 1941, Bull. Univ. Utah, biol. ser., vol. 6, no. 3, p. 12. Roewer, 1942, Katalog der Araneae vol. 1, p. 414. Levi and Levi, 1951, Zoologica, vol. 36, p. 220; 1955, Canadian Field Nat., vol. 69, p. 69. Lowrie and Gertsch, 1955, Amer. Mus. Novitates, no. 1736, p. 7.

Types. Syntypes from Clear Creek, Raft River Mountains, Utah, in the American Museum of Natural History.

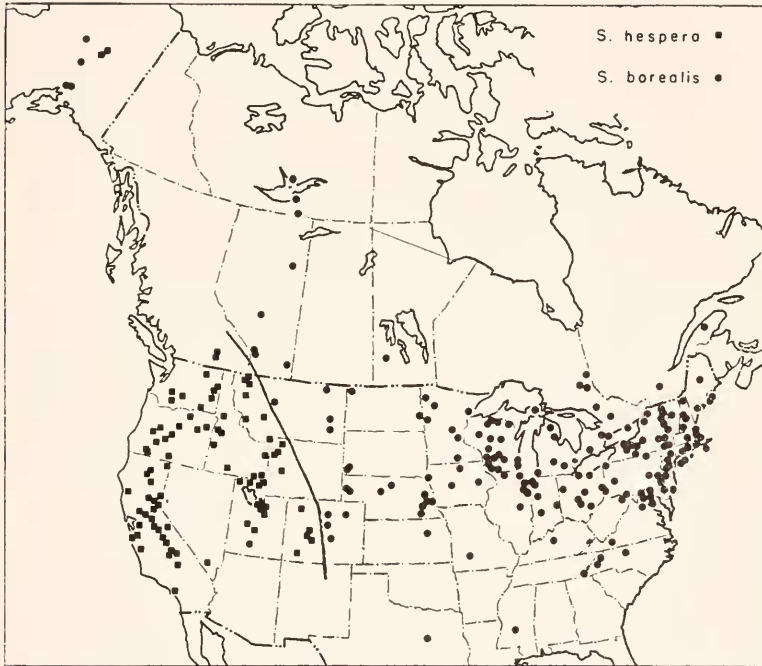
Diagnosis and Variation. The proportions of the anterior raised lobe as well as the even width of the depressed area of the epigynum (Figs. 111-115) distinguish this species from *S. borealis* and *S. atascadera*. The radix of the palpus lacks the median lobe typical of *S. borealis* and lacks the lobe below the tip typical of *S. atascadera* (Figs. 143, 146). Specimens from the western part of the range seem slightly larger in size than those of the east. Total length of females 4.2-7.5 mm.; of males, 3.6-5.4 mm.

Natural History. In Colorado this species has been collected under bark of dead conifers and in cabins at elevations between 8500 ft. and timberline.

Distribution. Western United States (Map 19).

Records. *British Columbia:* Salmon Arm; Vernon. *Montana:* Helena; Flathead Co.; Gallatin Co.; Glacier Natl. Pk.; Ravalli Co. *Wyoming:* Grand Teton Natl. Pk.; Sublette Co.; Teton Co.; Yellowstone Natl. Pk. *Colorado:* Gunnison Co.; La Plata Co.; Pitkin Co.; Routt Co. *Idaho:* Adams Co.; Bear Lake Co.; Franklin Co.; Idaho Co.; Payette Co.; Teton Co.; Twin Falls Co.;

Valley Co. *Utah*: Box Elder Co.; Cache Co.; Garfield Co.; Millard Co.; Rich Co.; Salt Lake Co.; Sevier Co.; Summit Co.; Utah Co.; Wasatch Co. *Nevada*: Clark Co.; Reno. *Washington*: Ferry Co.; Mt. Ranier Natl. Pk.; Spokane Co.; Walla Walla; Whitman Co.; Yakima. *Oregon*: Baker Co.; Crater Lk. Natl. Pk.; Deschutes Co.; Grant Co.; Jackson Co.; Klamath Co.; Lake Co.; Lane Co.; Morrow Co.; Three Sisters Primitive Area;



Map. 19. Distribution of *Steatoda hespera* Chamberlin and Ivie and *S. borealis* (Hentz).

Wheeler Co. *California*: Calaveras Co.; Contra Costa Co.; Eldorado Co.; Fresno Co.; Kings Canyon Natl. Pk.; Los Angeles Co.; Madera Co.; Mariposa Co.; Mendocino Co.; Modoc Co.; Mono Co.; Monterey Co.; Nevada Co.; Placer Co.; Sacramento Co.; Santa Clara Co.; Santa Cruz Co.; Sequoia Natl. Pk.; Shasta Co.; Sierra Co.; Siskiyou Co.; Tulare Co.; Yolo Co.; Yosemite Natl. Pk.; Yuba Co.

STEATODA BOREALIS (Hentz)

Figures 116-118, 148-154; Map 19.

- Theridion boreale* Hentz, 1850, Jour. Boston Soc. Nat. Hist., vol. 6, p. 274, pl. 9, fig. 4, ♂; 1875, Spiders of the United States, p. 145, pl. 16, fig. 4, ♂ pl. 21, fig. 13, ♂.
- Steatoda borealis*, Emerton, 1882, Trans. Connecticut Acad. Sci., vol. 6, p. 19, pl. 4, fig. 1, ♀, ♂. Keyserling, 1884, Die Spinnen Amerikas, vol. 2, no. 1, p. 119, pl. 6, fig. 77, ♀, ♂. McCook, 1890, American Spiders, vol. 2, p. 55. Marx, 1890, Proc. U.S. Natl. Mus., vol. 12, p. 521; 1892, Proc. Ent. Soc. Washington, vol. 2, p. 156. Fox, W., *op. cit.*, p. 268. Banks, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 31. Emerton, 1894, Trans. Connecticut Acad. Sci., vol. 9, p. 406. Baker, 1894, Ent. News, vol. 5, p. 164. Banks, 1895a, Jour. New York Ent. Soc., vol. 3, p. 84; 1895b, Ent. News, vol. 6, p. 182; 1899, Proc. Ent. Soc. Washington, vol. 4, p. 189. Emerton, 1902, The common spiders, p. 119, figs. 276-279, ♀, ♂. Scheffer, 1905, Trans. Kansas Acad. Sci., vol. 19, p. 192. Banks, 1907, Ann. Rept. Indiana Dept. Geol. and Nat. Res. no. 31, p. 739. Bryant, 1908, Occas. Papers Boston Soc. Nat. Hist., no. 9, p. 16. Banks, 1910, Bull. U.S. Natl. Mus., no. 72, p. 21. Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 188. Banks, 1911, Proc. Acad. Nat. Sci. Philadelphia, vol. 63, p. 445. Comstock, 1912, The spider book, p. 360, fig. 363, ♀. Emerton, 1913, Appalachia, vol. 12, p. 155. Barrows, 1918, Ohio Jour. Sci., vol. 18, p. 304. Bishop, 1924, Bull. New York State Mus. no. 251, p. 21. Barrows, 1925, Ann. Ent. Soc. Amer., vol. 18, p. 506. Emerton, 1928, Univ. Toronto Studies, Biol., vol. 32, p. 45. Crosby and Bishop, 1928, Mem. Cornell Univ. Agr. Exp. Sta., no. 101, p. 1040. Emerton, 1930, Publ. Nantucket Maria Mitchell Assoc., vol. 3, p. 164. Worley, 1931, Studies Univ. Nebraska, vol. 27, p. 28. Chickering, 1931, Papers Michigan Acad. Sci., vol. 15, p. 351. Elliott, 1932, Proc. Indiana Acad. Sci., vol. 41, p. 424. Chamberlin and Ivie, 1933, Bull. Univ. Utah, biol. ser., vol. 2, no. 2, fig. 7, ♀. Stiles and Detwiler, 1938, Proc. Iowa Acad. Sci., vol. 45, p. 286. Kurata, 1939, Canadian Nat., vol. 53, p. 81. Comstock, 1940, The spider book, rev. ed. p. 375; fig. 363, ♀. Kurata, 1941, Univ. Toronto Studies, biol. ser., no. 48, p. 109. Truman, 1942, Bull. Univ. Pittsburgh, vol. 38, no. 2, p. 4. Roewer, 1942, Katalog der Araneae, vol. 1, p. 413. Lowrie, 1942, Bull. Chicago Acad. Sci., vol. 6, p. 169. Kurata, 1943, Canadian Ent., vol. 57, p. 10. Muma, 1943, Common spiders of Maryland, p. 65, pl. 4, fig. 2, pl. 12, fig. 20. Chamberlin and Ivie, 1944, Bull. Univ. Utah, biol. ser., vol. 8, no. 5, p. 46. Muma, 1945, Bull. Agr. Exp. Sta. Univ. Maryland, no. A38, p. 27. Gertsch, 1946, in Procter, Biol. Surv. of the Mount Desert Reg., pt. 7, p. 519. Rapp, 1946, Bull. Brooklyn Ent. Soc., vol.

41, p. 4. Chamberlin and Ivie, 1947, Bull. Univ. Utah, biol. ser., vol. 10, no. 3, p. 27. Lowrie, 1948, Ecology, vol. 29, p. 350. Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 85, figs. 51-56, 2014, ♀, ♂. Gertsch, 1949, American spiders, p. 258. Kurata, 1949, Canadian Ent., vol. 81, p. 127. Elliott, 1953, Proc. Indiana Acad. Sci., vol. 62, p. 309. Kaston, 1953, How to know the spiders; p. 162. Levi and Field, 1954, Amer. Midland Nat., vol. 51, p. 444. Kaston, 1955, Trans. Illinois Acad. Sci., vol. 47, p. 166.

Type locality. "United States." The type specimens are lost.

Diagnosis. The wide raised median lobe, the swollen posterior area of the depression of the epigynum (Figs. 117-118), and the median lobe on the palpal radix (Fig. 148) distinguish this species from *S. hespera*. Total length of females: 3.8-7.0 mm.; of males, 4.3-5.9 mm.

Natural History. This is the common *Steatoda* of the eastern United States, which is found on buildings.

Distribution. East of the Rocky Mountains south to Texas and North Carolina; north to Alaska (Map 19). There are more old records from the southern states than recent ones. Shreveport, Louisiana (Banks, 1899), Alabama (Hentz, 1875) and Georgia (Keyserling, 1884), however, this species has only rarely been collected in these states during the last fifty years. One record probably an accidental one, is that of a male and female collected at Lakeside, San Diego County, California, by N. Banks, another from Eugene, Oregon, April 1947 (B. Malkin). ♂, probably introduced.

Records. *Alaska:* (Chamberlin and Ivie, 1947); Fox; Tanana; Mt. McKinley Natl. Pk. *Nova Scotia:* Coldbrook. *Quebec:* Montreal; Matapédia. *Ontario:* (Emerton, 1928; Kurata, 1939, 1941, 1943); 36 mi. N. of North Bay; St. Thomas; Lake Temagami; Newmarket; Haliburton. *Manitoba:* Riding Mountain. *Northwest Territory:* (Kurata, 1949), Outpost Island, Great Slave Lk. *Alberta:* Medicine Hat; MacMurray; Seba Beach; Mt. Sentinel. *Maine:* (Bishop, 1924); Cumberland Co.; Piscataquis Co. *New Hampshire:* Carroll Co.; Cheshire Co.; Coos Co.; Grafton Co. *Vermont:* Addison Co. *Massachusetts:* (Emerton, 1930); Essex Co.; Middlesex Co.; Norfolk Co.; Plymouth Co.; Worcester Co. *Rhode Island:* Providence. *Connecticut:* (Kaston, 1948). *New York:* (Banks, 1892; Bishop and Crosby, 1928); Clinton Co.; Fulton Co.; Jefferson Co.; Nassau Co.; Rockland

Co.; St. Lawrence Co.; Steuben Co. *New Jersey*: (Rapp, 1946); Bergen Co.; Cape May Co.; Mercer Co.; Morris Co. *Pennsylvania*: Bradford Co.; Montgomery Co.; Philadelphia Co.; Pittsburgh; Schuylkill Co. *Delaware*: Wilmington. *Maryland*: (Muma, 1943, 1945). *Virginia*: Fairfax Co.; Pulaski Co. *West Virginia*: Ohio Co. *North Carolina*: (Banks, 1911); Avery Co.; Buncombe Co.; Guilford Co.; Swaine Co. *Mississippi*: Rankin Co. *Ohio*: Athens Co.; Columbiana Co.; Cuyahoga Co. *Michigan*: (Hentz, 1875; Baker, 1894; Chickering, 1931; Lowrie, 1948); Chippewa Co.; Ogemaw Co.; Washtenaw Co. *Indiana*: (Banks, 1907; Lowrie, 1948; Elliott, 1953). *Kentucky*: Hardin Co. *Wisconsin*: (Levi and Field, 1954); Crawford Co.; Grant Co.; Marathon Co.; Milwaukee Co.; Racine Co. *Illinois*: (Lowrie, 1948, Kaston, 1955); Champaign Co.; Cook Co.; Winnebago Co. *Minnesota*: Clay Co.; Clearwater Co.; Freeborn Co.; Marshall Co.; Mille Lacs Co.; Minneapolis; Saint Louis Co. *Iowa*: (Stiles and Detwiler, 1938); Ames; Cerro Gordo Co.; Woodbury Co. *Missouri*: (Banks, 1895b). *North Dakota*: Divide Co.; Cass Co. *South Dakota*: Custer Co. *Nebraska*: (Worley, 1931); Saline Co. *Kansas*: Riley Co. *Texas*: McLellan Co.: Moody, Sept. 1941 (C. and M. Goodnight), ♀. *Montana*: Cascade Co.; Custer Co.; Daniel Co.; Prairie Co. *Colorado*: Denver; El Paso Co.; Larimer Co.; Morgan Co.